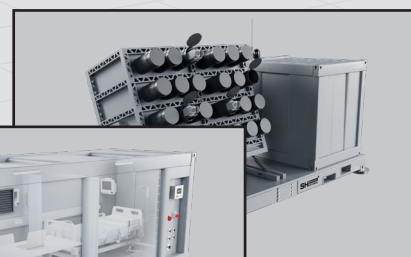
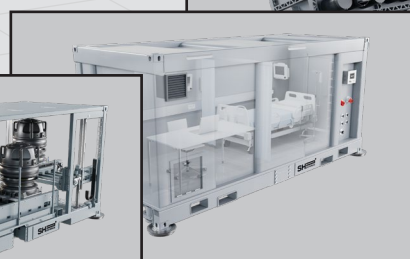
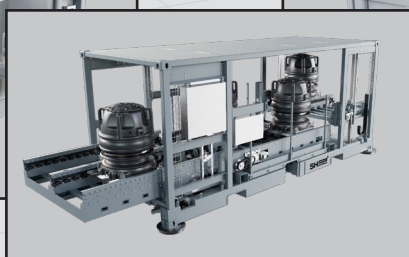
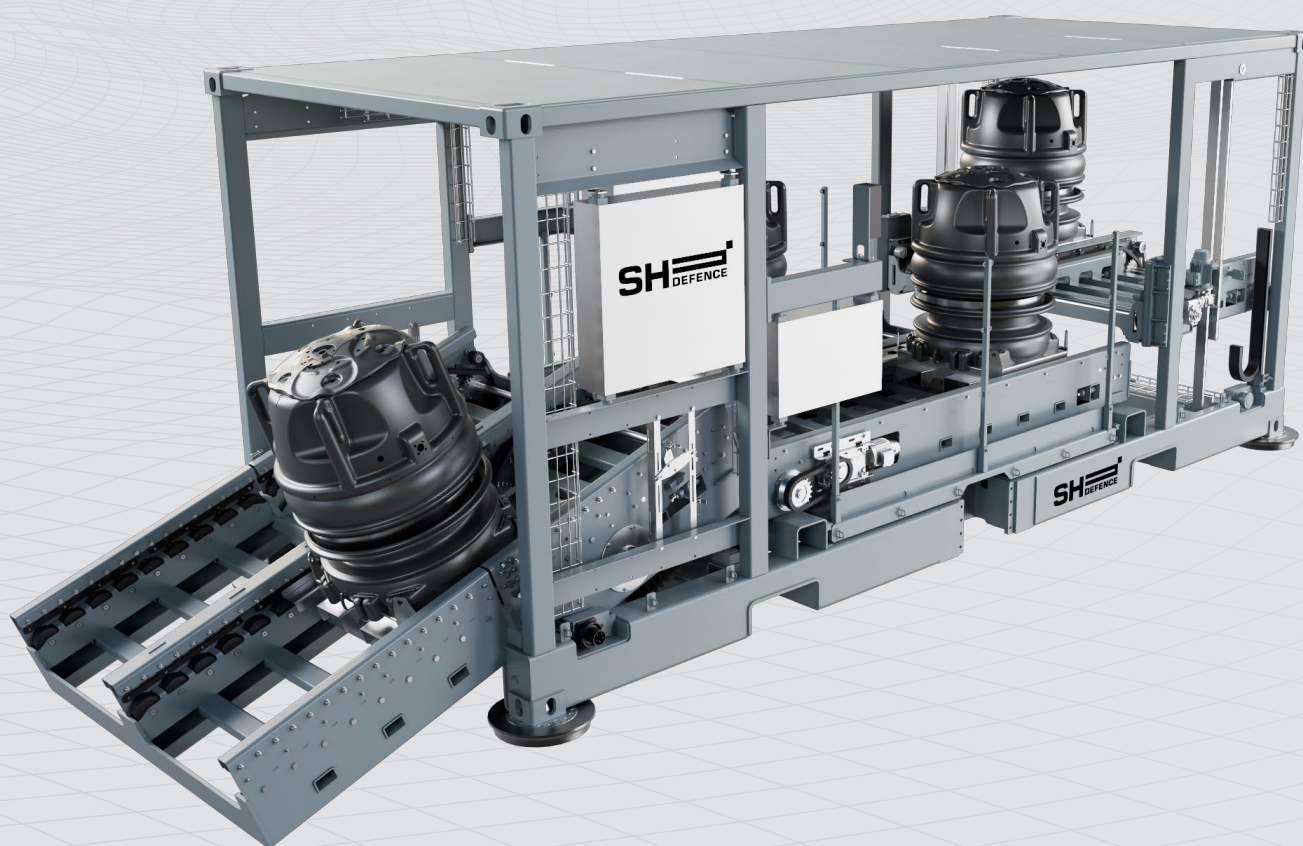




Cube™ Catalogue



Operation category



MINE LAYING

Mine Laying



ASuW

Anti-Surface Warfare - ASuW



NDRO

Naval Disaster Relief Operations - NDRO



MCM

Mine Counter Measures - MCM



EW

Electronic Warfare - EW



SAR

Maritime Search and Rescue - SAR



AAW

Anti-Air Warfare - AAW



NGF

Naval gun fire - NGF



HAZWASTE

Hazardous Waste Operations - HAZWASTE



ASW

Anti-Submarine Warfare - ASW



MIO

Maritime interdiction operation - MIO



UAW

Unmanned aerial warfare - UAW



OSR

Oil Spill Recovery - OSR



RV

Research Vessel - RV



CBRN

Chemical, Biological, Radiological, and Nuclear - CBRN



Power



Working air



Potable water



Fuel



Data



Black / Graywater

Introduction

This catalogue presents a featured selection of various module types developed by SH Defence. It is not intended to serve as an exhaustive showcase of all available or potential modules, but rather to illustrate a representative range of concepts and capabilities.

Each module entry includes indicative design features, dimensions, weights, and integration requirements. All Cube™ Components are initially designed for operation within a standard ambient temperature range. For applications requiring broader environmental tolerance, components can be optionally configured for an extended ambient temperature range of -45°C to +55°C. Guidance on applicable standards and considerations for future development is available. Please note that all details are subject to change until final specifications are formally agreed.

SH Defence reserves the right to amend the contents of this catalogue, including module designs, features, and technical details, as part of ongoing development and refinement.

The featured modules are designed to align with NATO standards, including ANEP-91, ANEP-99, and STANAG 4830. Our systems follow the principles of these standards to support interoperability, modularity, and integration across allied naval platforms. This approach ensures our modules are adaptable, mission-ready, and compatible with evolving NATO operational frameworks.

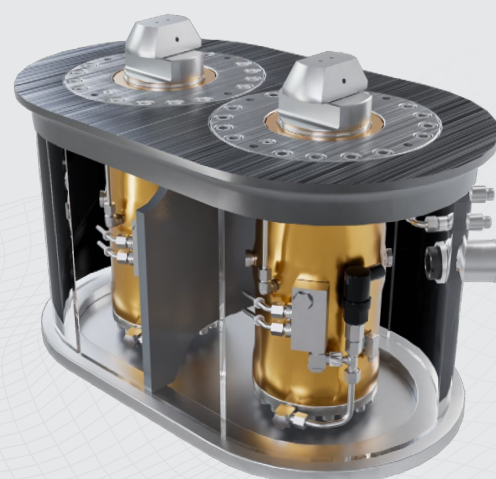


[HANDLING]

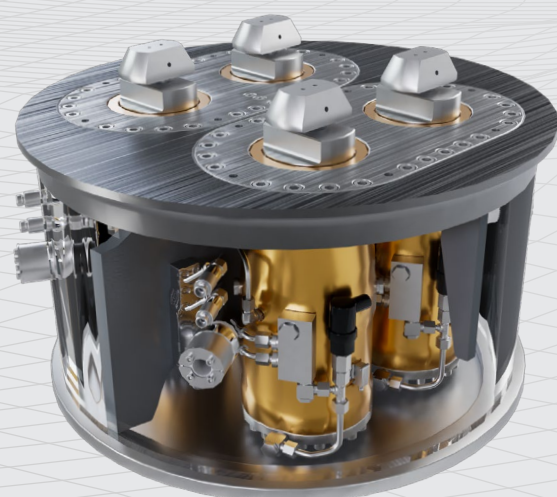
Remote Operated Twist Lock System



Single Twist Lock



Double Twist Lock
Longitudinal



Quadruple Twist Lock



Double Twist Lock
Transversal

Remote Operated Twist Lock System

Superior sea fastening of mission modules and ISO containers

System manufacturer:



Applications

The Cube™ Remote Operated Twist Lock System is designed for safe, efficient sea fastening of Cube™ Mission modules and ISO containers. Integrated into a vessel's deck structure, it delivers a superior pre-tension hold via hydraulic actuation, remote operation, and monitoring — enabling reliable locking even during dynamic marine conditions

Functions

The system includes:

- **Hydraulic Twist Locks:** Retractable cone and shear locks provide 250 kN of active pre-tensioning force.
- **Emergency release:** Built-in safety function to disengage locks when needed.
- **Modular configurations:** Available in single, double (longitudinal/transverse), or quad layouts to match container footprint.
- **Operator panel:** IP56-rated stainless steel control panel with 12" HMI for system monitoring, alarm history, and emergency stop.
- **Hydraulic Power Unit (HPU):** Standalone 3.5 kW unit with 80 L oil reservoir and flexible mounting options.

Considerations

Key design and integration aspects:

- **High load capacity:** Certified for 300 kN safe working load (tension and shear), proof load of 375 kN.
- **Shock rated:** Verified to STANAG 4142 ed.1 (NSSG1).
- **Compliance and certification:** DNV-certified under CP-0068 and ST-0194 standards.
- **Space planning:** Twist locks installed flush with deck; casing available in various layouts for different container sizes.
- **Control and safety:** Centralized control panel allows easy configuration and status monitoring with high safety standards.

Rules and regulations include:

- Relevant ship rules
- Certified by RINA and BV



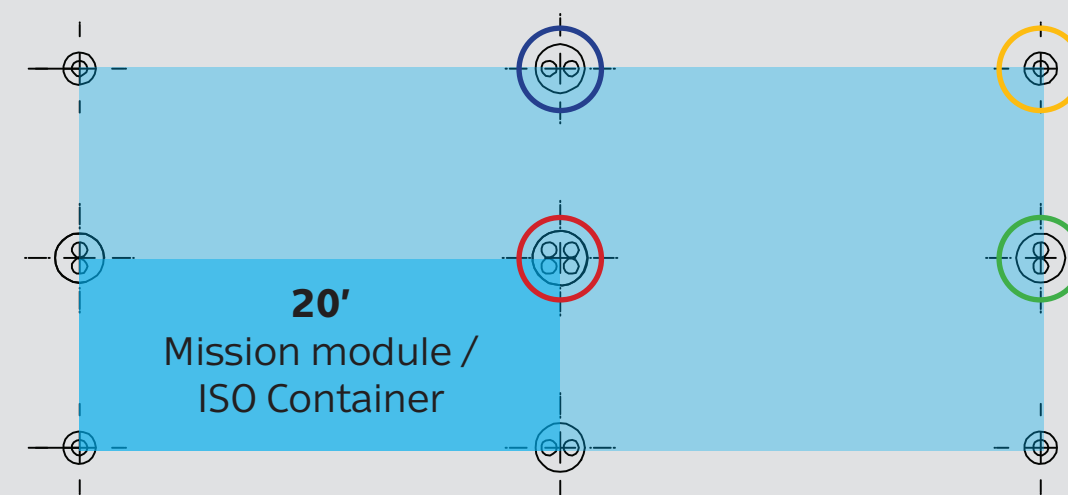
Dimensions
370mm x ø181



Material
High-strength steel

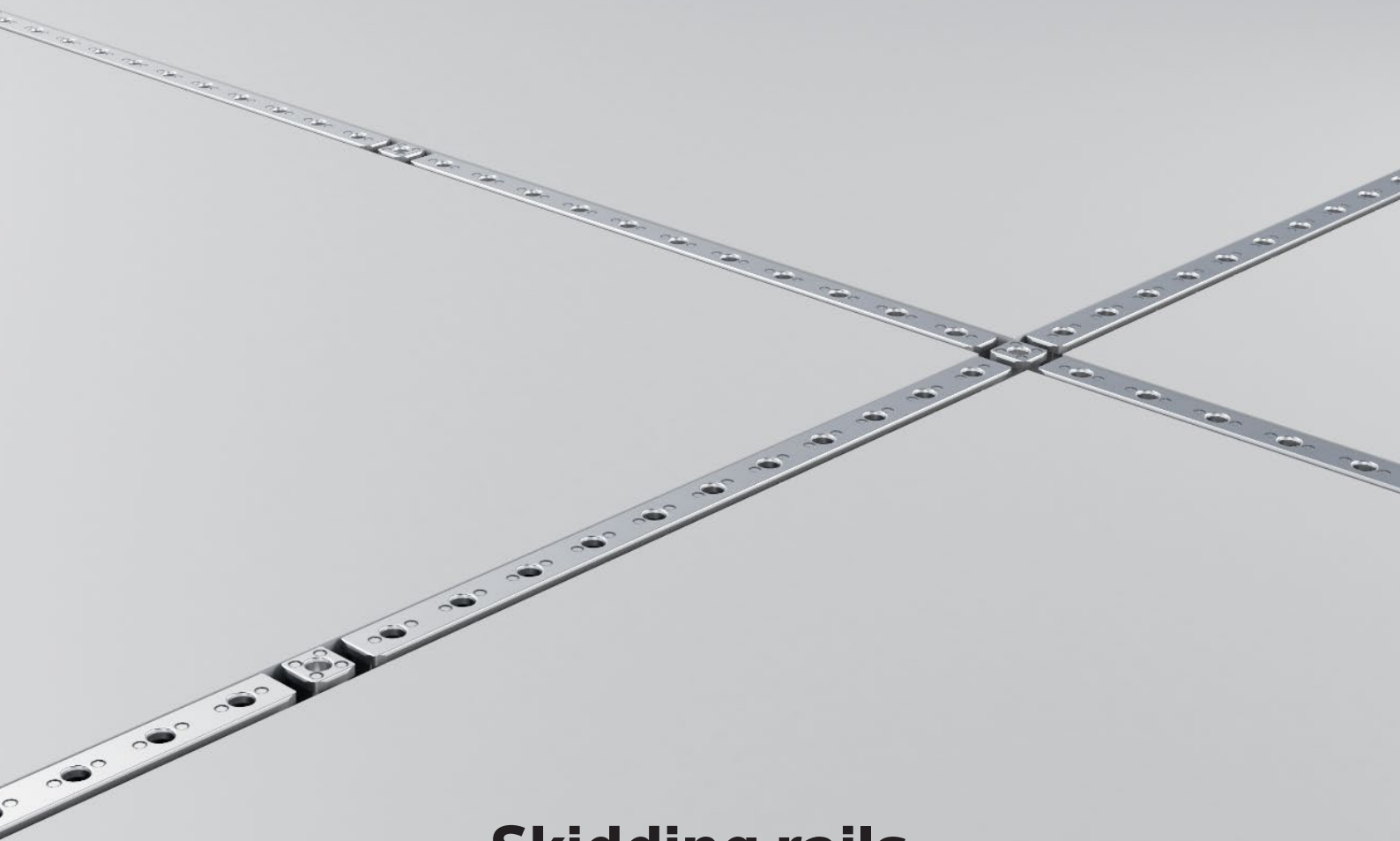


Design temperature
-25°C to +45°C





[HANDLING]
Skidding rails



Skidding rails

Enabling sea-state movement of modules

system manufactures:



Applications

The Cube™ Sea State Skidding System enables safe, flexible movement of Cube™ Mission modules or ISO containers (via Cube™ Base frames) across vessel decks, hangars, or mission bays. Installed as flush-mounted rails in the deck, the system supports operational repositioning of modules even underway within safe sea states enhancing mission adaptability across air, surface, and subsurface domains.

Options

System layouts and accessories include:

- **Longitudinal & Transverse Rails**
Custom-configured rail patterns for 20' or 2x40' modules. Installed flush with deck using optional box sections.
- **Cube™ Base Frame Self-propelled**
Base Frame connected securely to rail at all times. Mover pulls modules to new positions via integrated traction system.
- **Lifting Jacks & Sliding Pads**
Jacks raise modules for skidding; sliding pads available in materials suited to deck surface (e.g., coated steel, composite).
- **Cube™ Remote Operated Twist Locks**
For final sea fastening once repositioned. Fully compatible with ISO 668 containers.

Considerations

Key integration and performance aspects:

- **Always Rail-Connected:** Cube™ Base frame stays locked to rail during entire movement process.
- **Deck Structure Integration:** Rail profiles and mounting depth tailored by naval architects to platform requirements.
- **Sea-State Tolerance:** Safe skidding operation within vessel's certified dynamic limits.

Rules and regulations include:

- Relevant ship rules
- Certified by RINA and BV



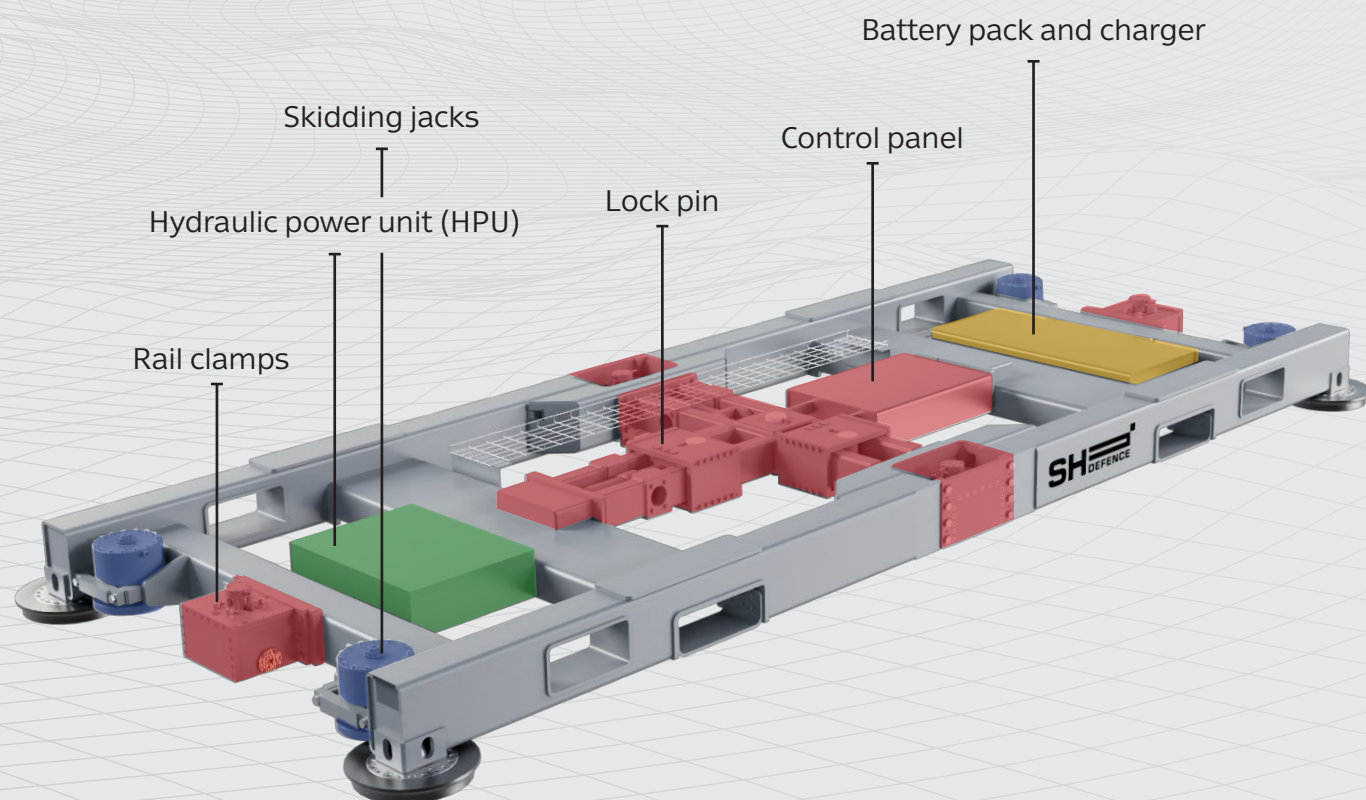
Material
High-strength steel



Design temperature
-20°C to +45°C



[HANDLING]
Base frame



Cube™ Base frame

Fully independent skidding

system manufactures:



Applications

The Cube™ Base Frame is a reinforced crash frame designed to provide ISO compatibility and secure sea fastening for non-ISO mission equipment with a footprint smaller than or equal to the size of a 20' container. It can be supplied either as a stand-alone product for attachment to an ISO container using twist locks or as an integrated part of the Cube™ mission modules. Both the stand-alone and integrated base frames are available in various configurations to meet specific operational needs. Configurations 1-2 require external moving means, such as a forklift or an external mover unit, and can only be moved while in port. Configurations 3-5 feature an integrated mover unit and lock pins that engage with the skidding rails to secure the module to the vessel, enabling self-propelled moving operations at sea. These operations can be controlled from the control cabinet or via remote control.

Available configurations (each point is an addition to the later stated features)



Configuration 1:

- High-strength steel frame
- ISO corner castings
- Forklift pockets
- Weight: Approx 2,500 kg
- Provides ISO compatibility for non-ISO equipment
- Repositioning by external means (in port only)



Configuration 2:

- Integrated lifting jacks and skidding pads
- Weight: Approx. 3,000 kg
- Repositioning using external mover possible (in port only)



Configuration 3:

- Hydraulic rail clamps and lock pins for secure sea-state moving operations
- Control cabinet
- Weight: Approx. 4,000 kg
- Self-propelled by integrated mover unit
- Needs external hydraulic power to operate



Configuration 4:

- Built-in HPU
- Weight: Approx 4,500 kg
- Self-propelled by integrated mover unit
- Needs external electrical power to operate



Configuration 5:

- Power bank and charger
- Weight: Approx. 5,000 kg
- Self-propelled without any need for external connections

(This configuration is in development)

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions
20' ISO container



Material
High-strength steel



Design temperature
-20°C to +45°C



Weight range
2.5 - 5 tonnes

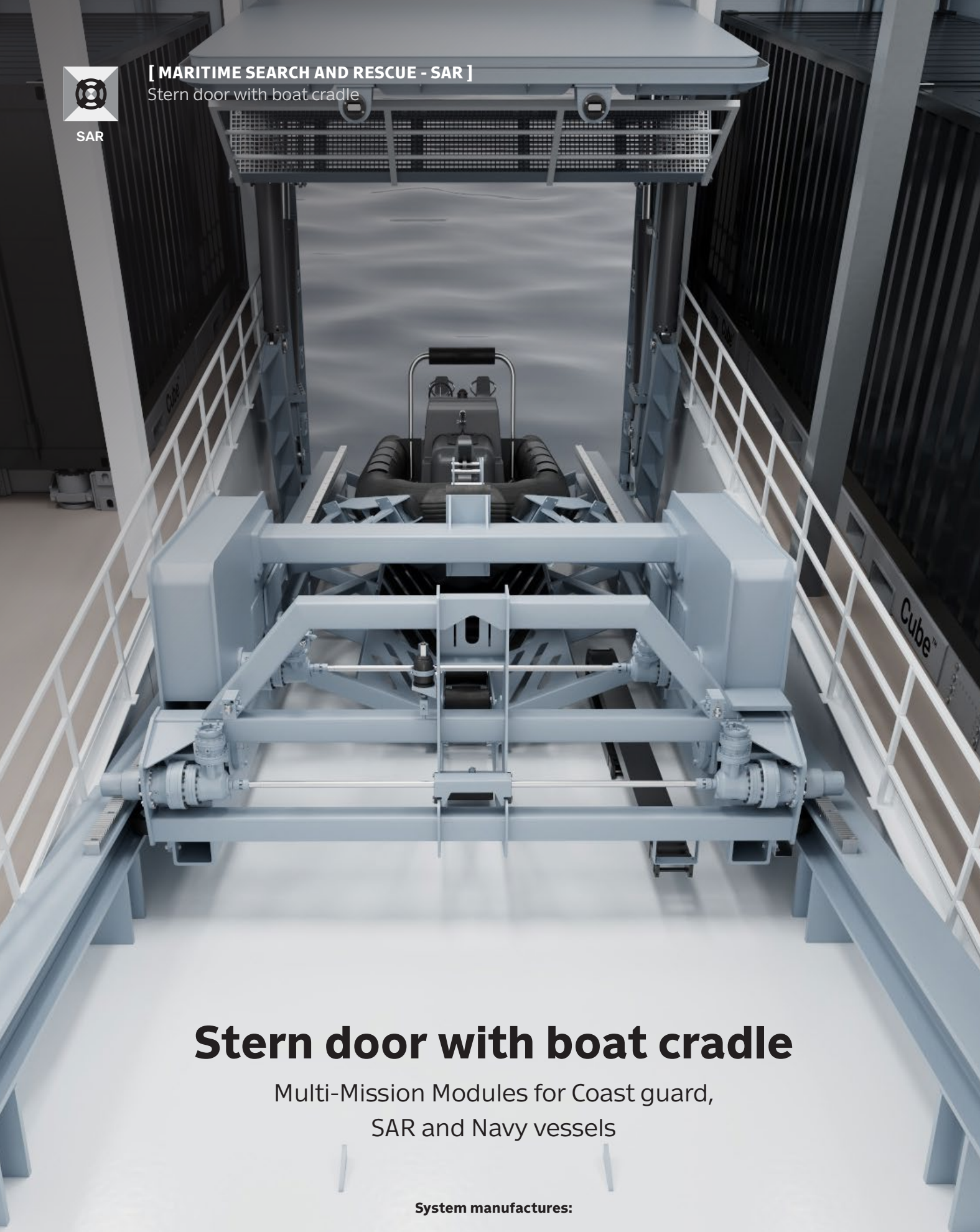




SAR

[MARITIME SEARCH AND RESCUE - SAR]

Stern door with boat cradle



Stern door with boat cradle

Multi-Mission Modules for Coast guard,
SAR and Navy vessels

System manufactures:

SH DEFENCE

Applications

The stern door with boat cradle mission module is a flexible system, enabling safe and efficient launch and recovery of a wide range of boats with different hull forms such as rigid-hulled inflatable boats (RHIBs) and other small craft. Designed for high-tempo operations, the module enhances maritime security, search and rescue (SAR), special operations, and boarding missions. It ensures rapid deployment and retrieval in various sea states, minimising crew exposure to hazardous conditions.

Options

The stern door and ramp come in different configurations, such as:

- **Slipway:** Tailor-made for drones and USV.
- **Cradle configurations:** Adjustable cradles for different boat sizes and hull shapes.
- **Door opening options:** The door can either be top sliding, side hinged, bottom hinged, or top and bottom hinged, subject to client requirements.
- **Launch and recovery assistance:** Integrated guide rails, powered winches, or automated handling systems.
- **Material and coating variants:** Corrosion-resistant coating and non-slip surfaces for harsh maritime environments.
- **Storage and integration:** Optimised for deck space when not in use.
- **Additional safety features:** Lashing points, shock-absorbing systems, and emergency-release mechanisms.

Considerations

Several factors should be considered when designing the stern door and ramp:

- **Stern design compatibility,** including structural reinforcement if necessary.
- **Consideration** of deck space and access for maintenance and personnel movement.
- **Safe operation** in rough sea conditions necessitates crew training and procedural adherence.
- **Power and hydraulic** requirements depend on automation level and vessel capabilities.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

Configured for vessel



Material

High strength steel



Design Temperature

-20°C to +45°C



Weight range

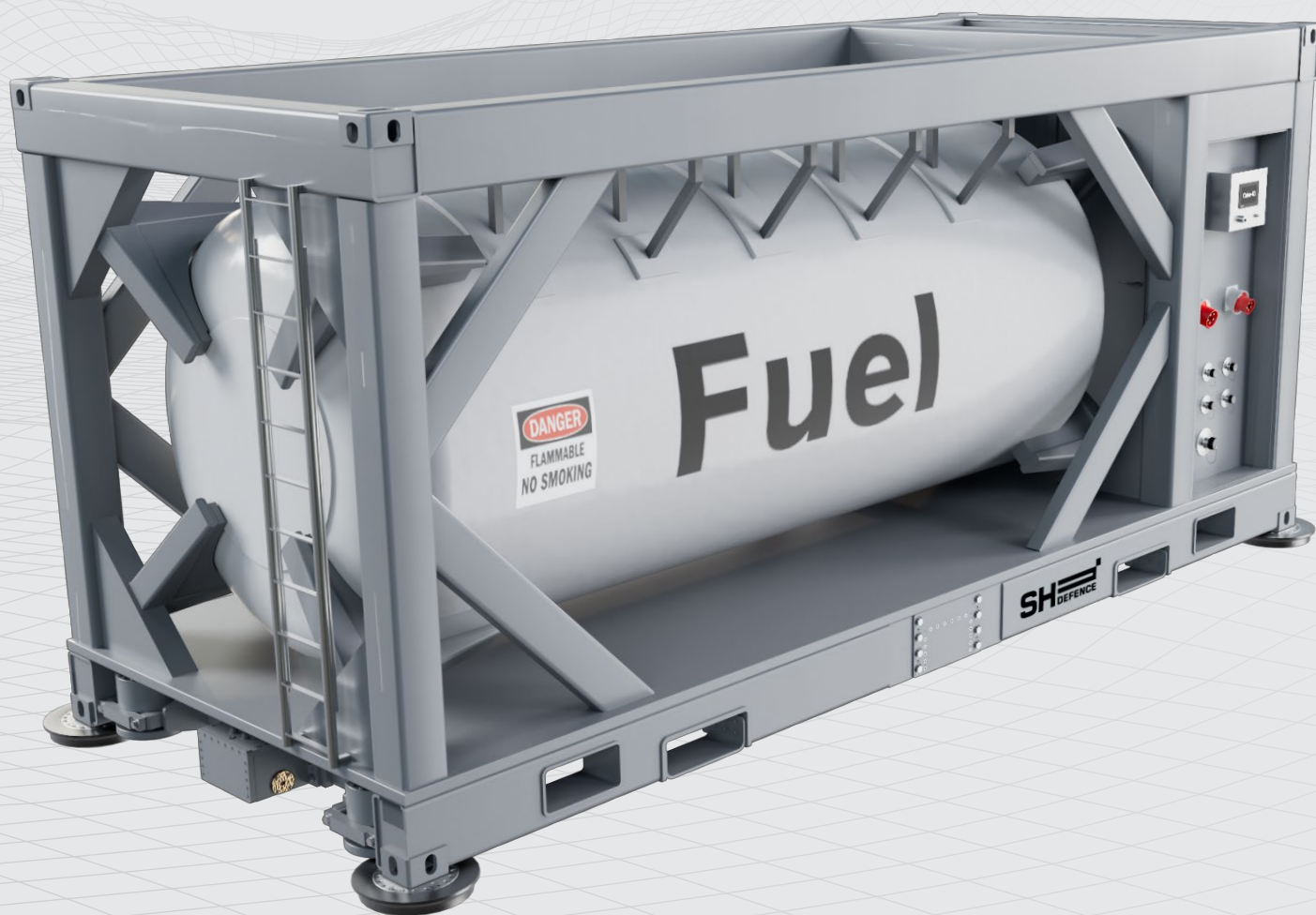
5 ton - 13 ton





[OIL SPILL RECOVERY - OSR]

Spill storage



Spill storage

Future-proof Containerised Multi-Mission Modules for
Coast guard, SAR and Navy vessels

Applications

A spill storage serves as a dedicated facility for the safe containment, handling and disposal of hazardous and non-hazardous spills generated onboard. The spill storage is critical for maintaining environmental compliance, ensuring operational safety and facilitating efficient spill response measures. The module would be designed to store oils, fuels, chemicals and other liquids; preventing contamination of ship compartments and the marine environment.

Options

Mission-depending, a spill storage would contain one or more of the below options:

- **Containment:** Spill containment pallets, banded flooring and sealed storage drums.
- **Storage:** Shelving systems for smaller containers or bulk storage tanks for larger volumes of hazardous materials.
- **Spill response:** Absorbent pads, booms, spill kits and neutralising agents.
- **Ventilation:** Forced air or passive ventilation to mitigate hazardous fumes and maintain safe air quality.
- **Fire suppression:** Automatic fire suppression systems, such as dry chemical or foam-based extinguishing units, to enhance fire safety.
- **Secondary containment:** Double-walled tanks or lined compartments to provide an additional level of spill containment.
- **Drainage and pumping systems:** Pumps and drain systems for controlled removal of liquids from spill collection area.

Considerations

Several factors should be considered when designing the spill storage module:

- **Space utilisation:** The internal layout must optimise storage efficiency while allowing easy access to spill response equipment.
- **Weight distribution:** Proper weight balancing is essential to ensure the module does not compromise vessel stability.
- **Material compatibility:** All storage and containment materials should be resistant to the hazardous substances they will hold.
- **Safety compliance:** Safety signage, PPE storage and clear operational procedures should be included.
- **Integration with shipboard systems:** Compatibility with existing waste management and hazardous material handling protocols is essential.
- **Lead time:** The spill storage module is an off-the-shelf solution, so the lead time would be relatively short.
- **Maintenance requirements:** The mission module would be included in the vessel maintenance management system.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions
20' ISO container



Material
High strength steel



Design Temperature
-20°C to +45°C



Weight range
5 ton - 13 ton



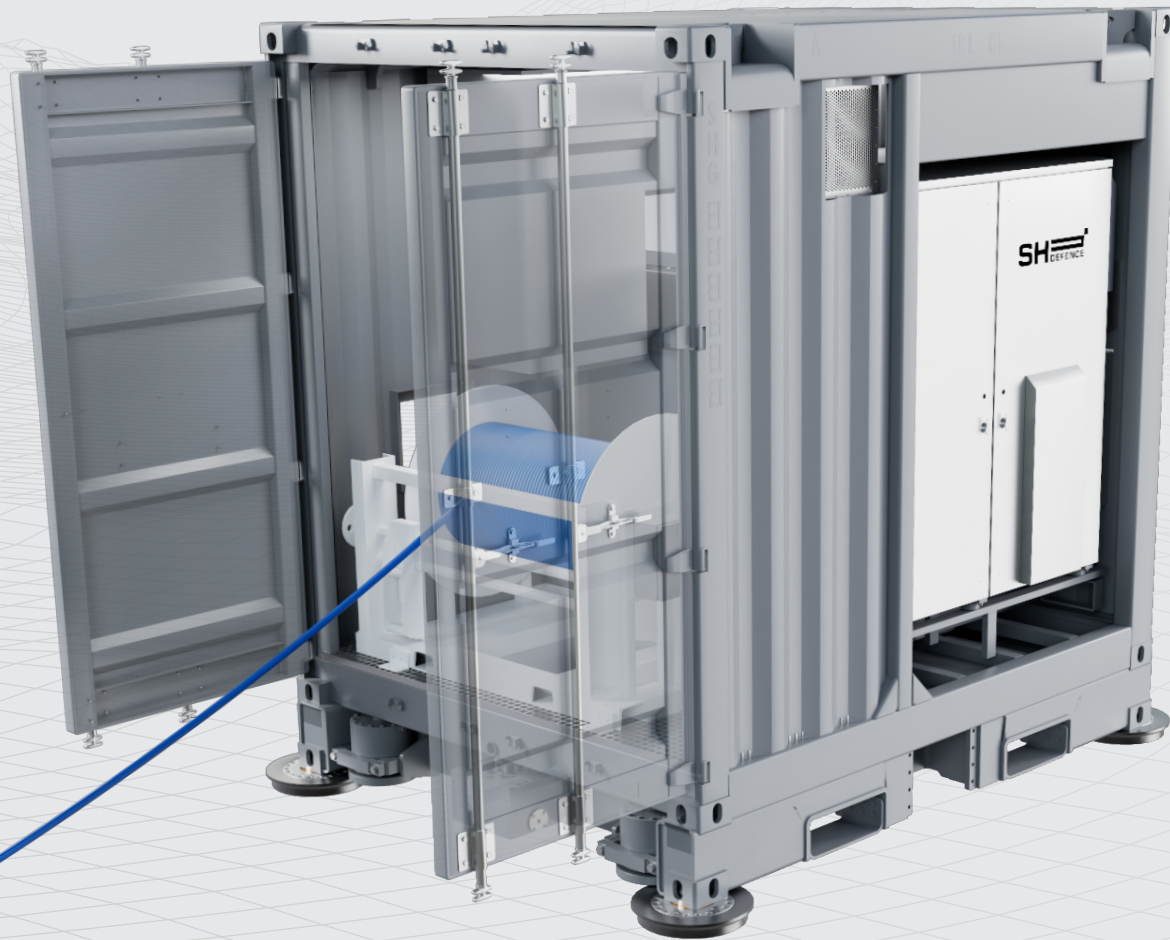


ASW

[ANTI SUBMARINE WARFARE - ASW]

Towed away sonar (TAS)

Module shown 10'



Towed Array Sonar (TAS)

For detect, track, and classify underwater threats

Potential system manufactures:



Applications

The TAS/VDS modules support anti-submarine warfare (ASW) operations by housing and deploying advanced sonar systems. Sophisticated sonar equipment enhances a vessel's ability to detect, track, and classify underwater threats at extended ranges. A module fitted with the preferred TAS system provides controlled handling and storage for TAS equipment, ensuring reliable operation in various maritime conditions while increasing fleet situational awareness and defensive capabilities.

Options

TAS modules are available in different configurations to meet specific ASW operational needs:

- **Towed array sonar module:** Designed for deploying and recovering towed passive-sonar arrays, improving long-range submarine detection.
- **Combined TAS module:** Integrates both towed array and variable depth sonar capabilities for enhanced ASW flexibility.
- **Support and maintenance module:** Includes storage for spares, maintenance tools, and calibration equipment for sonar system upkeep.

Considerations

The following should be considered in relation to the design integration of TAS into a CMM of the Module:

- **Handling systems:** Ensure safe and efficient deployment and recovery of sonar arrays in rough seas.
- **Vibration and noise isolation:** Minimise self-noise interference to maintain sonar effectiveness.
- **Power and data integration:** Provide reliable power supply and data links to the vessel's combat system.
- **Environmental protection:** Design for corrosion resistance and watertight integrity in harsh marine conditions.
- **Space optimisation:** Allow sufficient storage and workspace for sonar equipment, maintenance, and personnel operations.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

10' ISO container



Material

High strength steel



Design Temperature

-20°C to +45°C



Weight range

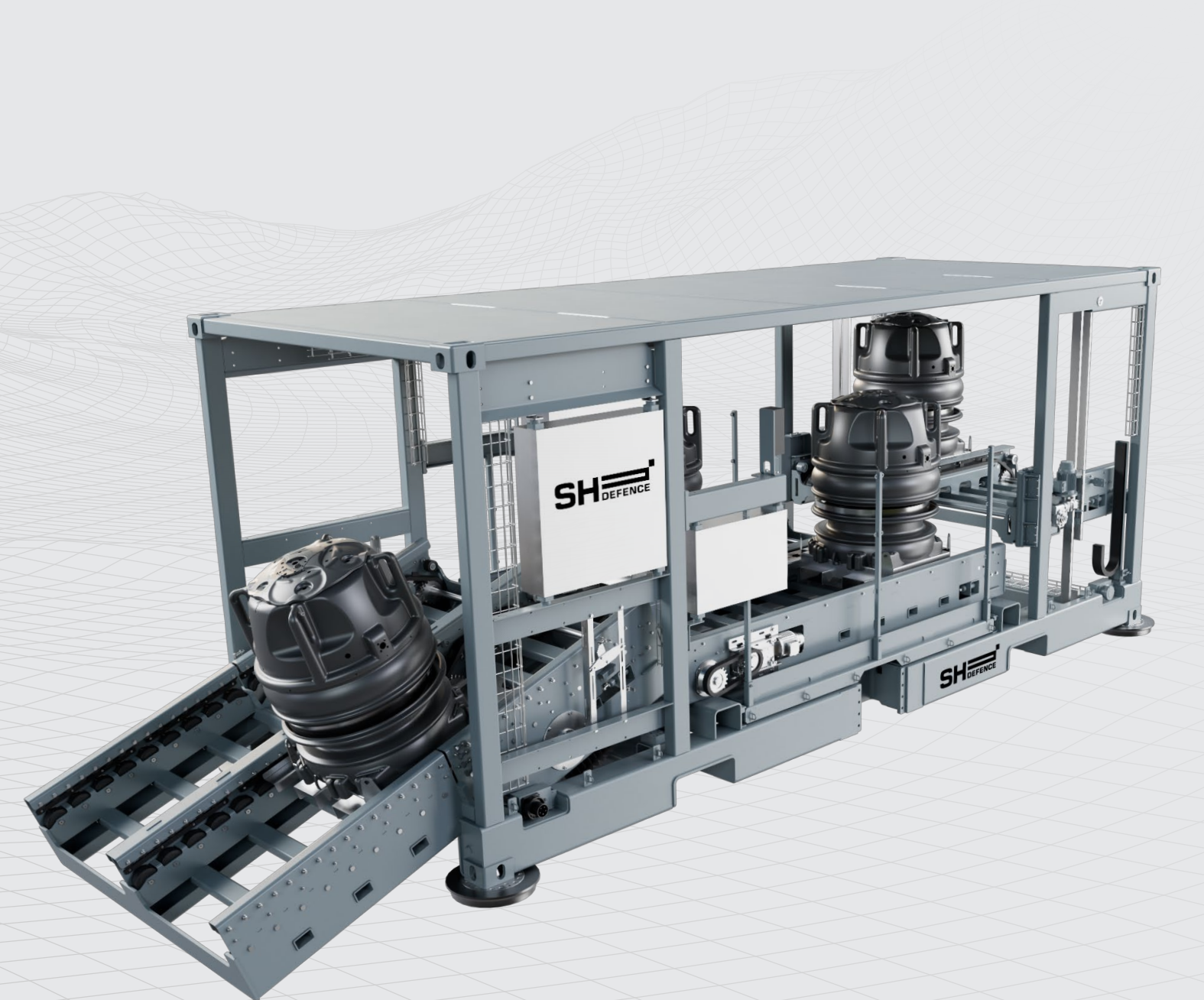
5 ton - 13 ton





[MINE LAYING]

Mine laying module



Mine laying module

Safe preparation and deployment of mines, flexible for different type of mines

Potential system manufactures:



Applications

The mine laying module has been developed to encompass storage, handling, and deployment of sea mines in maritime operations. It enhances a vessel's ability to conduct area denial, sea lane disruption, and defensive mining missions. The module provides a secure and controlled environment for mine preparation and deployment, ensuring safe and efficient operations while integrating with broader naval mine warfare strategies.

Options

The mine laying module is available in different configurations to support various operational requirements:

- **20' launch module:** A combined -launch and storage module capable of deploying 6 to 26 mines, depending on mine size and type.
- **Automated mine deployment module:** Incorporates semi- or fully automatic handling and laying mechanisms, reducing crew workload and enhancing safety during mine deployment.
- **20' Mine feeder:** A dedicated feeder to use in combination with the launch module to launch up to 40 mines per module (subject to the type). Delivers additional payload capability and provides ease of handling and storage onboard.

Considerations

The following items should be considered in the design of the module:

- **Operational efficiency:** Incorporated automated systems to minimise manual handling, reducing crew fatigue and the potential for human error during mine deployment.
- **Integration with ship systems:** The ability to provide seamless communication with the vessel's combat and navigation systems.
- **Operational flexibility:** Allow for an amount of reconfiguration based on mission-specific mine types and quantities.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

20' ISO container



Material

High strength steel



Design Temperature

-20°C to +45°C



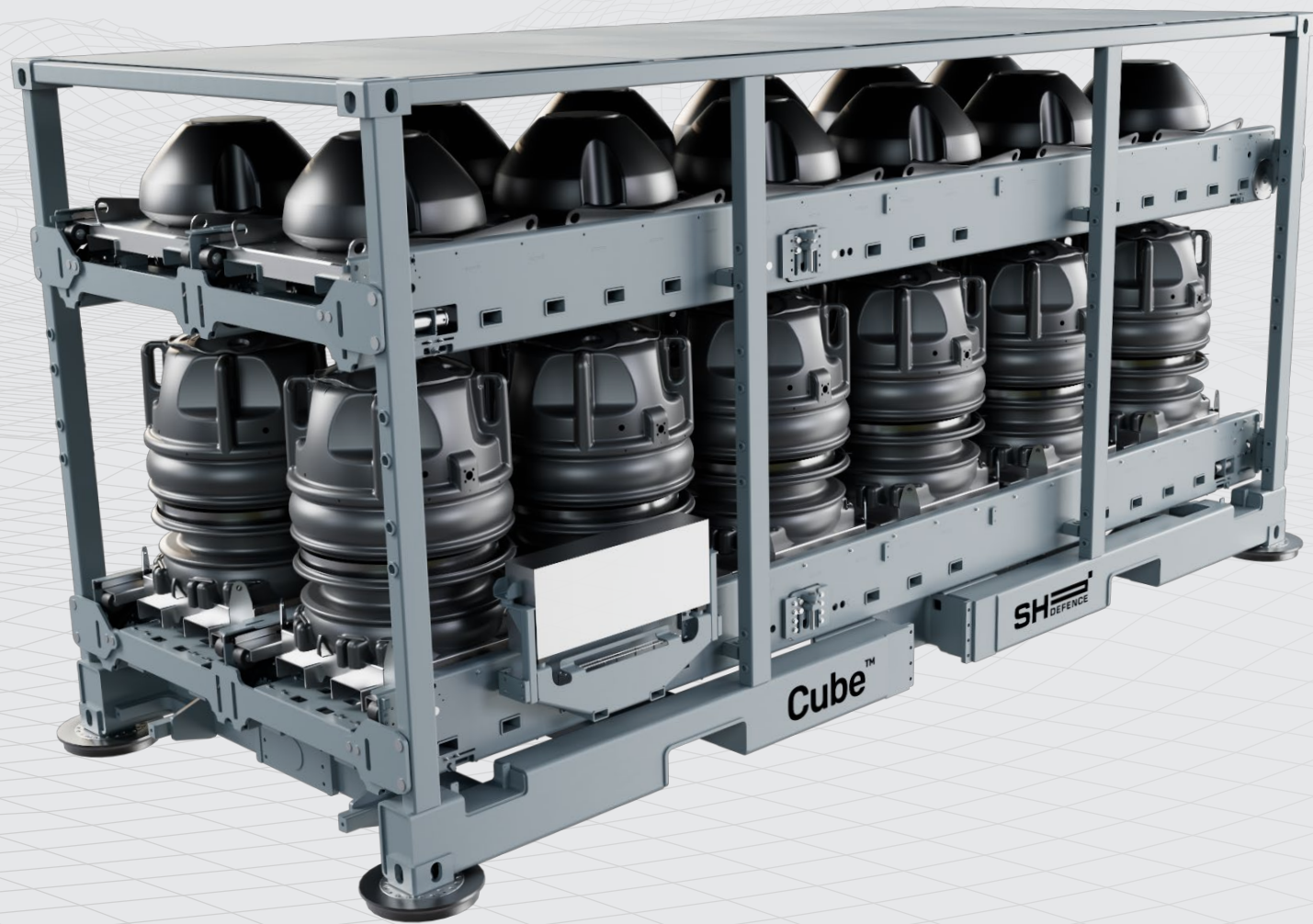
Weight range

5 ton - 13 ton





[MINE LAYING]
Mine stowage (magazine)



Mine feeder module

Safe and efficient deployment of mines at sea

Potential system manufactures:



Applications

The mine feeder module is designed for the secure storage and transport of sea mines aboard Naval vessels. It helps to ensure safe handling and readiness of mines for deployment during mine laying operations, enhancing a vessel's capability to conduct effective mine warfare missions. This modular approach allows for rapid reconfiguration of ships to adapt to evolving tactical requirements.

Options

The mine feeder module is available in configurations tailored to specific operational needs:

- **20' storage module:** Designed to store up to 48 mines, facilitating extended operational readiness.
- **Mine laying module:** A 20' module capable of both storing and deploying 6 to 26 mines, depending on mine size and type, offering integrated functionality.

Considerations

- **Safety protocols:** Implement robust safety measures for mine handling and storage, including secure locking mechanisms and compliance with explosive material regulations.
- **Integration with ship systems:** The modules feature a connection solution that when combined with the vessel's existing infrastructure, facilitates seamless communication and operational efficiency.
- **Modularity and compatibility:** The module integrates seamlessly within the EPC concept, allowing for rapid reconfiguration and deployment.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions
20' ISO container



Material
High strength steel



Design Temperature
-20°C to +45°C

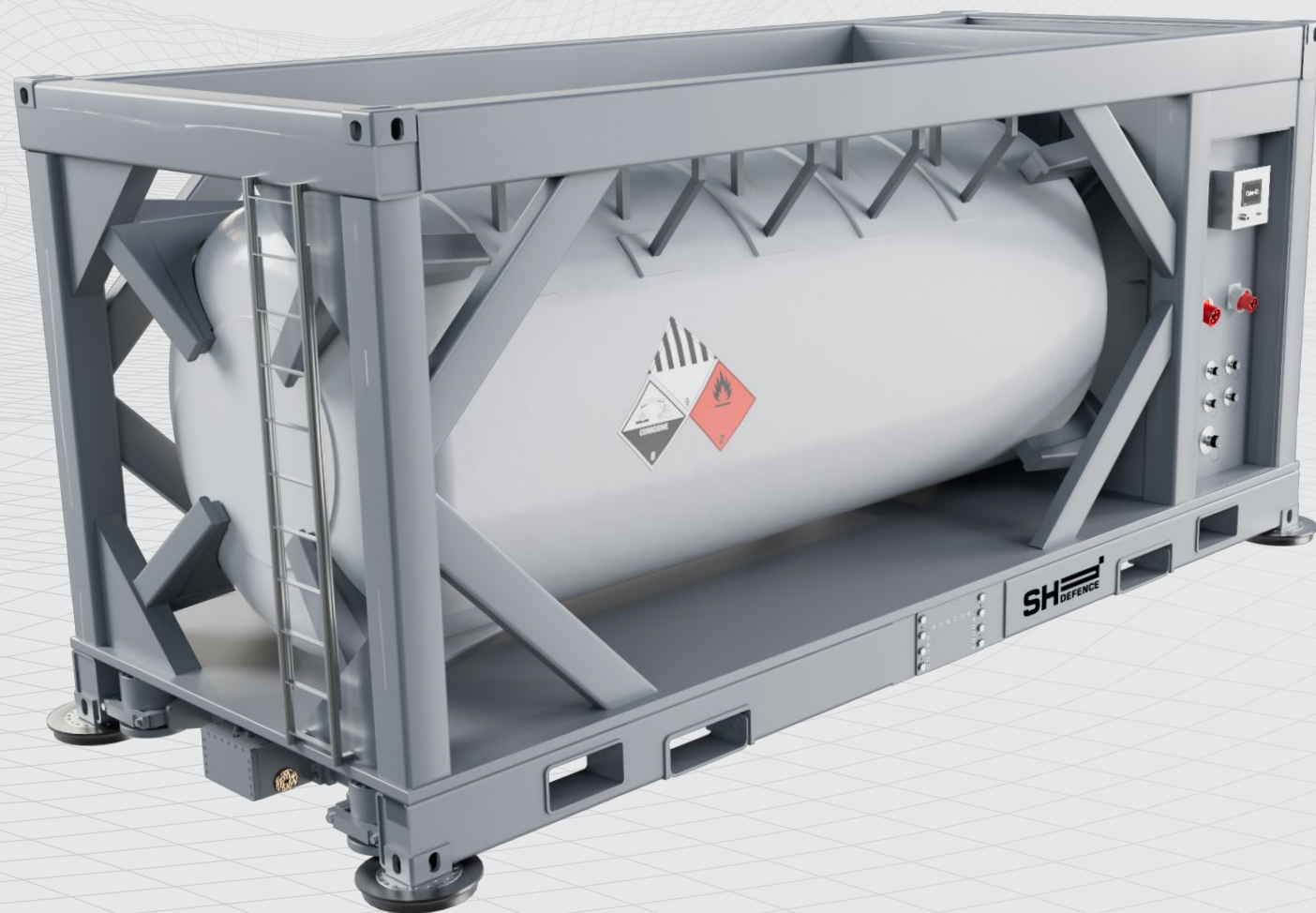


Weight range
5 ton - 13 ton





[HAZARDOUS WASTE OPERATIONS - HAZWASTE]
Hazardous materials stowage



Hazardous materials stowage

For the safe containment, handling and disposal of hazardous substances

Applications

Hazardous materials stowage would serve as a dedicated facility for the safe containment, handling, and future disposal of hazardous substances generated onboard navy vessels. This stowage module is critical for maintaining environmental compliance, ensuring operational safety, and facilitating efficient hazardous material management when the mission dictates it. The module is designed to store oils, fuels, chemicals and other hazardous substances, preventing contamination of ship compartments and marine environments.

Options

Mission-dependent, a hazardous materials stowage module would contain one or more of the below options:

- **Containment:** Options include spill containment pallets, bundled flooring and sealed storage drums.
- **Storage:** Shelving systems for smaller containers or bulk storage tanks for larger volumes of hazardous materials.
- **Ventilation:** Forced air or passive ventilation to mitigate hazardous fumes and maintain safe air quality.
- **Fire suppression:** Automatic fire suppression systems, such as dry chemical or foam-based extinguishing units, to enhance fire safety.
- **Secondary containment:** Double-walled tanks or lined compartments to provide an additional level of spill containment.
- **Hazardous material handling:** Equipment such as safety cabinets, eyewash stations and emergency showers may be included to ensure personnel safety.
- **Labelling and segregation:** Proper hazard identification and designated areas for different material classes help minimise cross-contamination risks.

Considerations

The following items should be considered in the design of the module:

- **Space utilisation:** The internal layout must optimise storage efficiency while allowing easy access to hazardous materials and response equipment.
- **Weight distribution:** Proper weight balancing is essential to ensure the module does not compromise vessel stability.
- **Material compatibility:** All storage and containment materials should be resistant to the hazardous substances they will hold.
- **Safety compliance:** Safety signage, PPE storage, and clear operational procedures should be included.
- **Integration with shipboard systems:** Compatibility with existing hazardous material handling and disposal protocols is essential.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions
20' ISO container



Material
High strength steel



Design Temperature
-20°C to +45°C



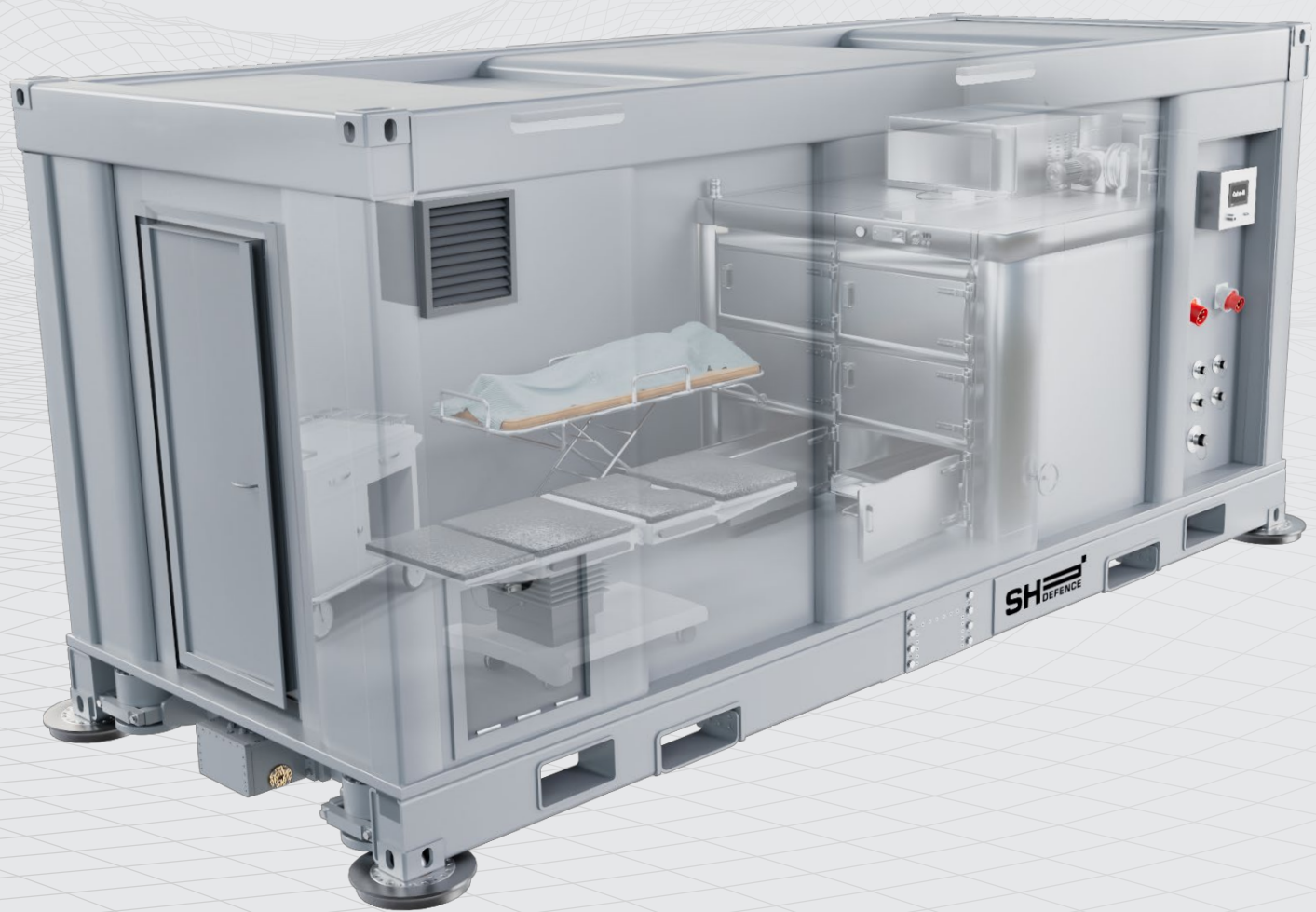
Weight range
5 ton - 13 ton





NDRO

[NAVAL DISASTER RELIEF OPERATIONS]
Morgue module



Morgue

For the temporary storage of deceased personnel

Applications

A morgue facility would serve as a dedicated space for the temporary storage of deceased personnel aboard navy vessels. This facility ensures the dignified handling, preservation, and containment of remains until they can be transferred to appropriate shore-based facilities. The morgue module is essential for operational continuity in certain types of operations, medical support, and adherence to naval protocols regarding the handling of casualties at sea.

Options

Mission-dependent, a morgue module would contain one or more of the below options:

- **Refrigeration systems:** Temperature-controlled storage units to ensure the proper preservation of remains.
- **Storage capacity:** Configurable shelving or compartmentalised refrigeration units to accommodate multiple remains.
- **Hygiene and sanitation measures:** Stainless steel surfaces, drainage systems, and decontamination stations for personnel handling remains.
- **Backup power supply:** Uninterruptible power sources to ensure continued refrigeration functionality in case of power failure.
- **Security and access control:** Restricted access systems to maintain security and ensure compliance with protocols.
- **Autopsy and examination space:** If required, a designated area for medical examination and documentation would be added.
- **Ventilation and odour control:** High-efficiency ventilation and filtration systems to manage air quality and mitigate odours.

Considerations

Several factors should be considered when designing the morgue module:

- **Temperature control:** Ensuring refrigeration systems maintain optimal conditions for preservation.
- **Space utilisation:** Efficient layout to accommodate remains while allowing space for personnel movement and procedures.
- **Hygiene and sterility:** Materials and design must support easy sanitation and compliance with medical standards.
- **Weight distribution:** Proper weight balancing is essential to ensure the module does not compromise vessel stability.
- **Safety and security:** Measures to prevent unauthorised access and ensure the respectful handling of remains.
- **Integration with shipboard systems:** Compatibility with medical and logistical procedures for handling casualties.
- **Maintenance requirements:** The mission module would be included in the vessel maintenance management system.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions
20' ISO container



Material
High strength steel

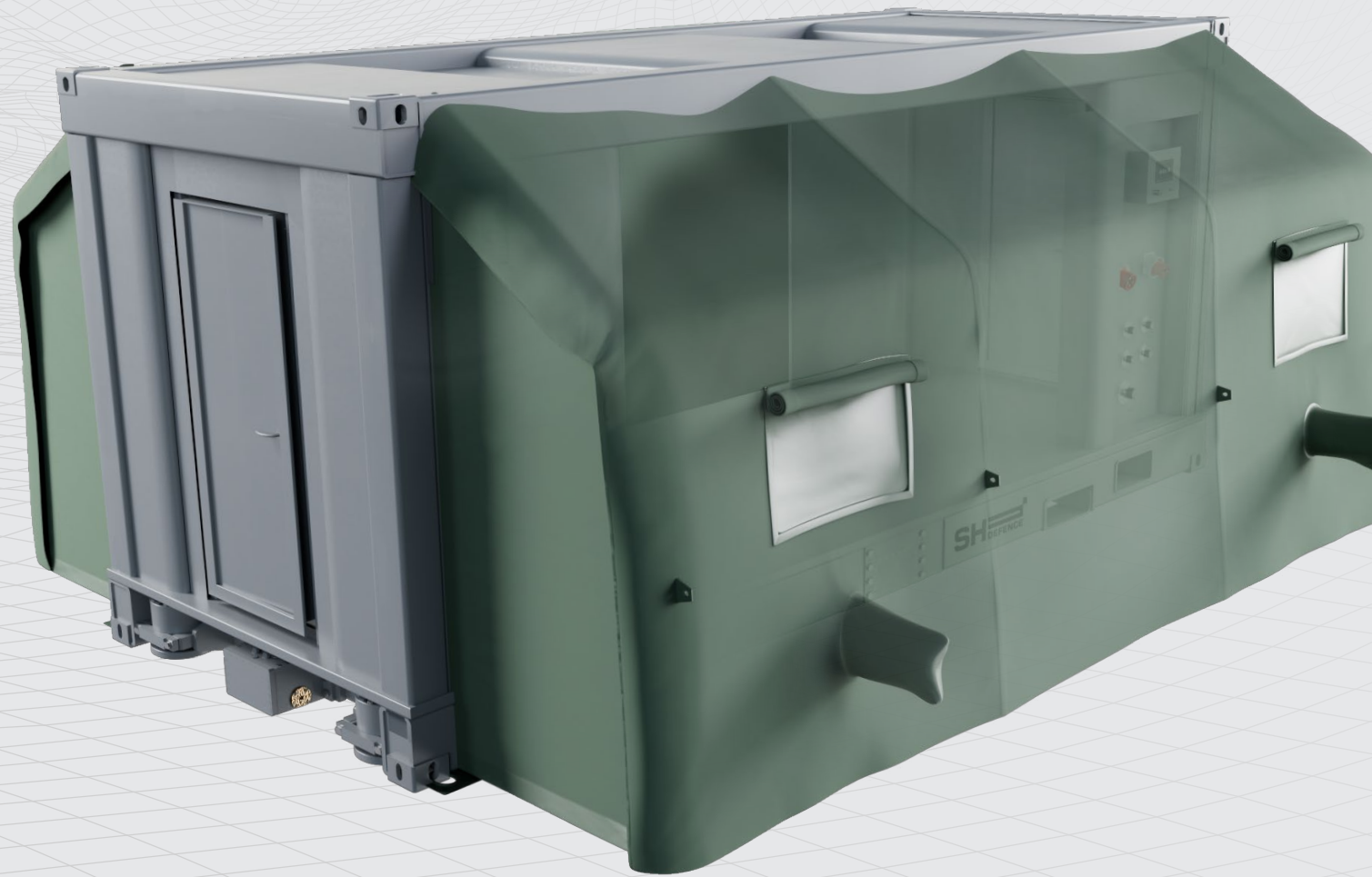


Design Temperature
-20°C to +45°C



Weight range
5 ton - 13 ton





Deployable shelter

Versatile module designed to excel in diverse mission scenarios

Potential system manufactures:



Applications

A deployable shelter would serve as a flexible, multi-purpose space that can be used for various operational needs onboard the EPC. This facility module type can be configured as a command centre, medical bay, personnel housing or storage unit, depending on mission requirements. The deployable shelter enhances operational capability by providing a rapidly deployable, self-contained facility for temporary or emergency use.

Options

Mission/depending, a deployable shelter would contain one or more of the below options:

- **Climate control systems:** HVAC units for temperature regulation in different environments.
- **Structural reinforcement:** Reinforced walls and flooring for durability in adverse conditions. Ideal if the unit is disembarked in a land based operational theatre.
- **Flexible interior layouts:** Configurable partitions for mission-specific adaptations.
- **Power and lighting systems:** Integrated power solutions, including generators or shipboard power connectivity.
- **Storage and workspaces:** Modular shelving, workstations, or bunk arrangements.
- **Communication equipment:** Secure radio, satellite, and networking infrastructure.
- **Water and sanitation systems:** If required, integrated water supply and waste disposal systems.

Considerations

The following items should be considered in the design of the module:

- **Space utilisation:** The internal layout must optimise storage efficiency while allowing easy access to hazardous materials and response equipment.
- **Weight distribution:** Proper weight balancing is essential to ensure the module does not compromise vessel stability.
- **Material compatibility:** All storage and containment materials should be resistant to the hazardous substances they will hold.
- **Safety compliance:** Safety signage, PPE storage, and clear operational procedures should be included.
- **Integration with shipboard systems:** Compatibility with existing hazardous material handling and disposal protocols is essential.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions
20' ISO container



Material
High strength steel



Design Temperature
-20°C to +45°C



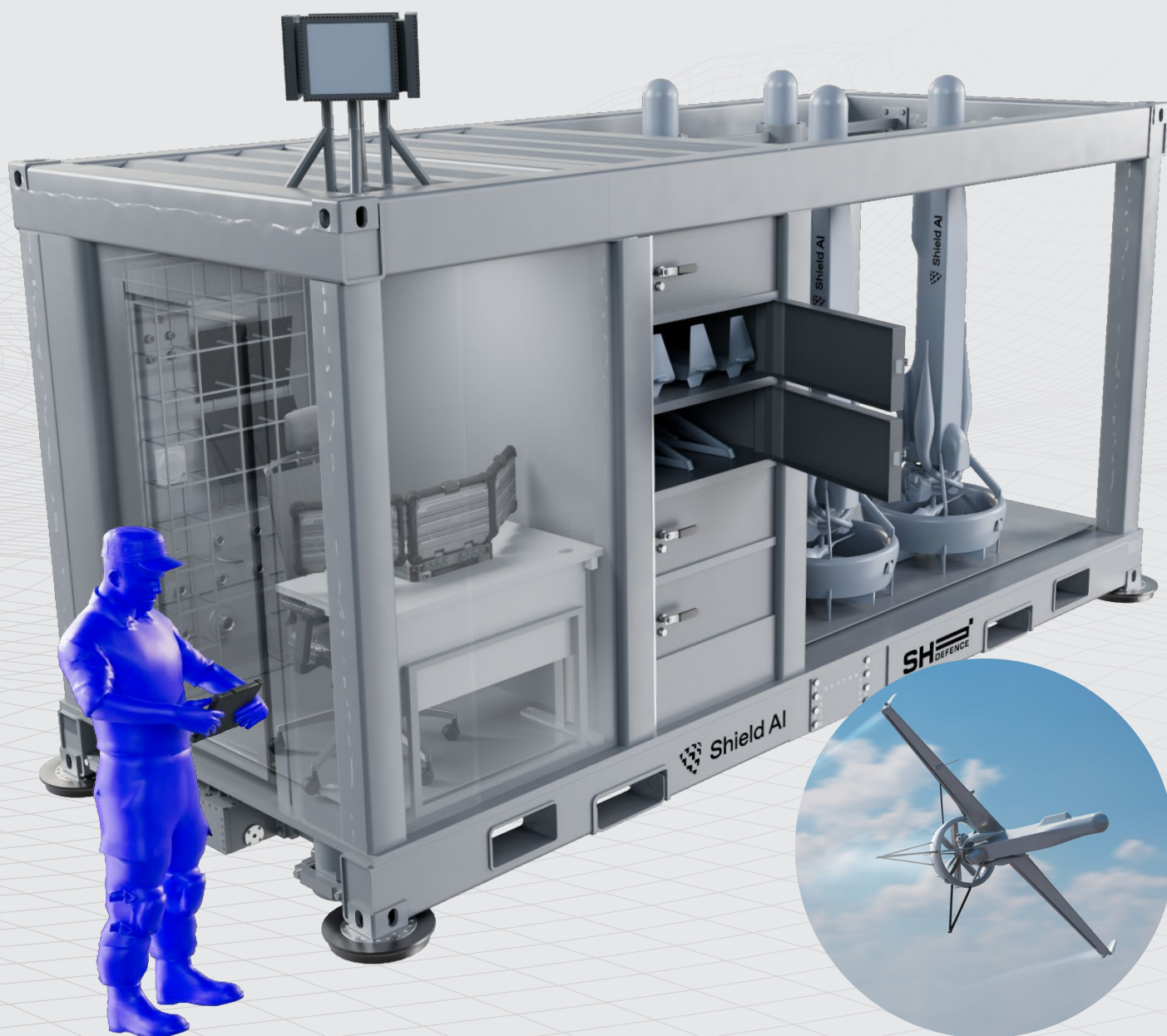
Weight range
5 ton - 13 ton





[RECONNAISSANCE & SURVEILLANCE - ISR]

UAV module and control room



UAV module and control room

Effective storage and easy access and deployment of UAVs

Potential system manufactures:



Applications

The UAV module and control room enable naval forces to deploy and operate unmanned aerial vehicles (UAVs) for missions such as surveillance, reconnaissance, search and rescue, and environmental monitoring. Integrated within a 20' container, this system enhances operational flexibility and mission effectiveness.

Options

The UAV module and control room offer various configurations to suit diverse operational needs:

- **UAV module:** A containerised unit that integrates UAV systems and related equipment with focus on UAV storage, deployment and maintenance.
- **Command and control unit:** A command centre for managing UAV operations, equipped with advanced communication and control systems. This configuration ensures seamless operation of UAVs, including mission planning, real-time data processing, and video feeds.
- **Combined module and unit:** Command and control functionality and the physical UAV handling capacity is combined in one compact and modular solution. This integrated approach maximises space efficiency while providing a streamlined, mobile, and robust UAV operation platform.

Considerations

The following items should be considered before choosing the best option for a specific mission:

- **Integration with existing systems:** Consider compatibility with current naval platforms and communication networks for streamlined operations.
- **Environmental durability:** The module should be able to withstand harsh maritime conditions using corrosion-resistant materials and robust sealing.
- **Safety protocols:** Fail-safe mechanisms must be implemented, and appropriate safety standards adhered to, preventing accidents during launch, recovery, and operation.
- **Regulatory compliance:** The system must meet all relevant military and international regulations governing UAV operations.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

20' ISO container



Material

High strength steel



Design Temperature

-20°C to +45°C



Weight range

5 ton - 13 ton





[ANTI SURFACE WARFARE - ASuW]
USV module and control room



USV module and control room

Optimized Storage, Efficient Access, Rapid Deployment of USV

Applications

The USV (Uncrewed Surface Vessel) module and control room provide a compact, solution for operating, launching, and recovering USVs in operations. The type of USV selected for integration can enable remote and autonomous operations, including surveillance, mine countermeasures, anti-submarine warfare, and force protection. The system supports real-time mission control, data analysis, and secure communication with deployed USVs, enhancing operational flexibility and reducing risk to crewed vessels.

Options

The USV module and control room are available in multiple configurations to accommodate different systems and mission needs. Configurations include:

- **Basic control module** – Equipped with operator workstations, secure communications, and real-time data monitoring.
- **Control and storage module** – Includes USV stowage, maintenance space, and charging stations.
- **Control and launch module** – Integrates a launch and recovery system (LARS) for USV deployment and retrieval.
- **Launch module** – Customisable for specialised payloads, such as sonar systems, electronic warfare, search and rescue or autonomous logistics.

Considerations

The module’s design must ensure compatibility with various USV types, payload requirements, and naval platform integration:

- **Space optimisation** is critical to accommodate control systems, operator workstations, and equipment storage.
- **Environmental factors**, including temperature regulation and electromagnetic shielding, must be addressed to protect sensitive electronics.
- **Data links and redundancy**: The module should also support robust data links and redundancy measures for continuous USV operations.
- **Safety measures**, including emergency override systems and cybersecurity protections, are essential for secure and reliable operations.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

Oversized and depended on boat



Material

High strength steel



Design Temperature

-20°C to +45°C



Weight range

5 ton - 13 ton





ASW

[ANTI SUBMARINE WARFARE - ASW]

UUV module with control room



UUV module with control room

Secure Storage, Seamless Access, Swift Deployment of UUVs

Applications

The UUV (Uncrewed Underwater Vehicle) module and control room module offer a fully integrated, containerised solution for the storage, deployment, operation, and monitoring of UUVs in naval operations. These modules can be equipped to support underwater surveillance, mine countermeasures, anti-submarine warfare, and seabed mapping. The combination of the UUV module and control room enables real-time data analysis, secure communication with deployed UUVs, and mission planning, enhancing operational efficiency while reducing risks to crewed vessels.

Options

The UUV module and control room are available in various configurations to support diverse operational needs and systems:

- **Basic control module:** Equipped with operator workstations, mission planning software, and secure communication systems.
- **Control and maintenance module:** Features workstations, tool storage, and maintenance facilities for UUV servicing.
- **Control and launch module:** Integrates a launch and recovery system (LARS) for efficient UUV deployment and retrieval.
- **Multi-mission module:** Configurable for specialised payloads, including sonar arrays, electronic warfare, and oceanographic sensors.

Considerations

The module design supports interoperability with multiple UUV platforms, ensuring compatibility with payloads, sensors, and data links:

- **Efficient use of space** for operator workstations, equipment storage, and potential maintenance areas.
- **Environmental controls**, including temperature and humidity regulation, are necessary to protect sensitive electronics.
- **Secure, high-bandwidth communication systems** can be integrated for real-time data transfer and mission control.
- **Safety measures**, such as emergency overrides, redundancy systems, and cybersecurity protections; all, essential to ensure reliable and secure operations.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

20' ISO container



Material

High strength steel



Design Temperature

-20°C to +45°C



Weight range

5 ton - 13 ton





ASW

[ANTI SUBMARINE WARFARE - ASW]

ROTV module with control room



ROTV module with control room

Secure Storage, Seamless Access, Swift Deployment of UUVs

Potential system manufactures:

EIVA

Applications

The ROTV (Remotely operated towed vehicle) module and control room module offer a fully integrated, containerised solution for the storage, deployment, operation, and monitoring of ROTVs in naval operations. These modules can be equipped to support underwater surveillance, mine countermeasures, anti-submarine warfare, and seabed mapping. The combination of the ROTV module and control room enables real-time data analysis, secure communication with deployed ROTV, and mission planning, enhancing operational efficiency while reducing risks to crewed vessels.

Options

The ROTV module and control room are available in various configurations to support diverse operational needs and systems:

- **Basic control module:** Equipped with operator workstations, mission planning software, and secure communication systems.
- **Control and maintenance module:** Features workstations, tool storage, and maintenance facilities for ROTV servicing.
- **Control and launch module:** Integrates a launch and recovery system (LARS) for efficient ROTV deployment and retrieval.
- **Multi-mission module:** Configurable for specialised payloads, including sonar arrays, electronic warfare, and oceanographic sensors.

Considerations

The module design supports interoperability with multiple ROTV platforms, ensuring compatibility with payloads, sensors, and data links:

- **Efficient use of space** for operator workstations, equipment storage, and potential maintenance areas.
- **Environmental controls**, including temperature and humidity regulation, are necessary to protect sensitive electronics.
- **Secure, high-bandwidth communication systems** can be integrated for real-time data transfer and mission control.
- **Safety measures**, such as emergency overrides, redundancy systems, and cybersecurity protections; all, essential to ensure reliable and secure operations.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

20' ISO container



Material

High strength steel



Design Temperature

-20°C to +45°C



Weight range

5 ton - 13 ton





MIO

[MARITIME INTERDICTION OPERATIONS]

Accommodation unit



Accommodation unit

Temporary or permanent onboard living space for embarked personnel

Applications

An accommodation unit would serve as a temporary or permanent living space for personnel onboard vessels. This unit provides essential amenities to ensure crew comfort, rest and operational readiness, particularly in situations requiring additional berthing capacity, such as extended missions, humanitarian aid operations or fleet expansions.

Options

Mission-dependent, an accommodation unit would contain one or more of the below options:

- **Berthing arrangements:** Options include bunk beds, single occupancy cabins or modular sleeping quarters.
- **Climate control systems:** Integrated HVAC units for temperature regulation and air circulation.
- **Sanitary facilities:** can be configured with en-suite bathrooms or shared restroom access.
- **Storage solutions:** Lockers, shelving and under-bed compartments for personal belongings.
- **Lighting and electrical systems:** Dimmable lighting, power outlets and USB charging stations.
- **Privacy features:** Partitioned sleeping areas, soundproofing and blackout curtains.
- **Recreational and work areas:** Small desks, seating arrangements and entertainment provisions.

Considerations

Several factors should be considered when designing the accommodation unit:

- **Space utilisation:** Efficient use of available space to maximise comfort and functionality.
- **Weight distribution:** Proper balance to maintain vessel stability when deployed.
- **Ventilation and air quality:** Adequate airflow to ensure a healthy living environment.
- **Safety and security:** Fire-resistant materials, emergency exits and secure access control.
- **Hygiene and maintenance:** Use of easy-to-clean surfaces and scheduled sanitation protocols.
- **Lead time:** Accommodation units are off-the-shelf products, so the lead time would be reasonably short.
- **Maintenance requirements:** Regular servicing of HVAC systems, plumbing and structural integrity checks to ensure habitability and reliability.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

20' ISO container



Material

High strength steel



Design Temperature

-20°C to +45°C



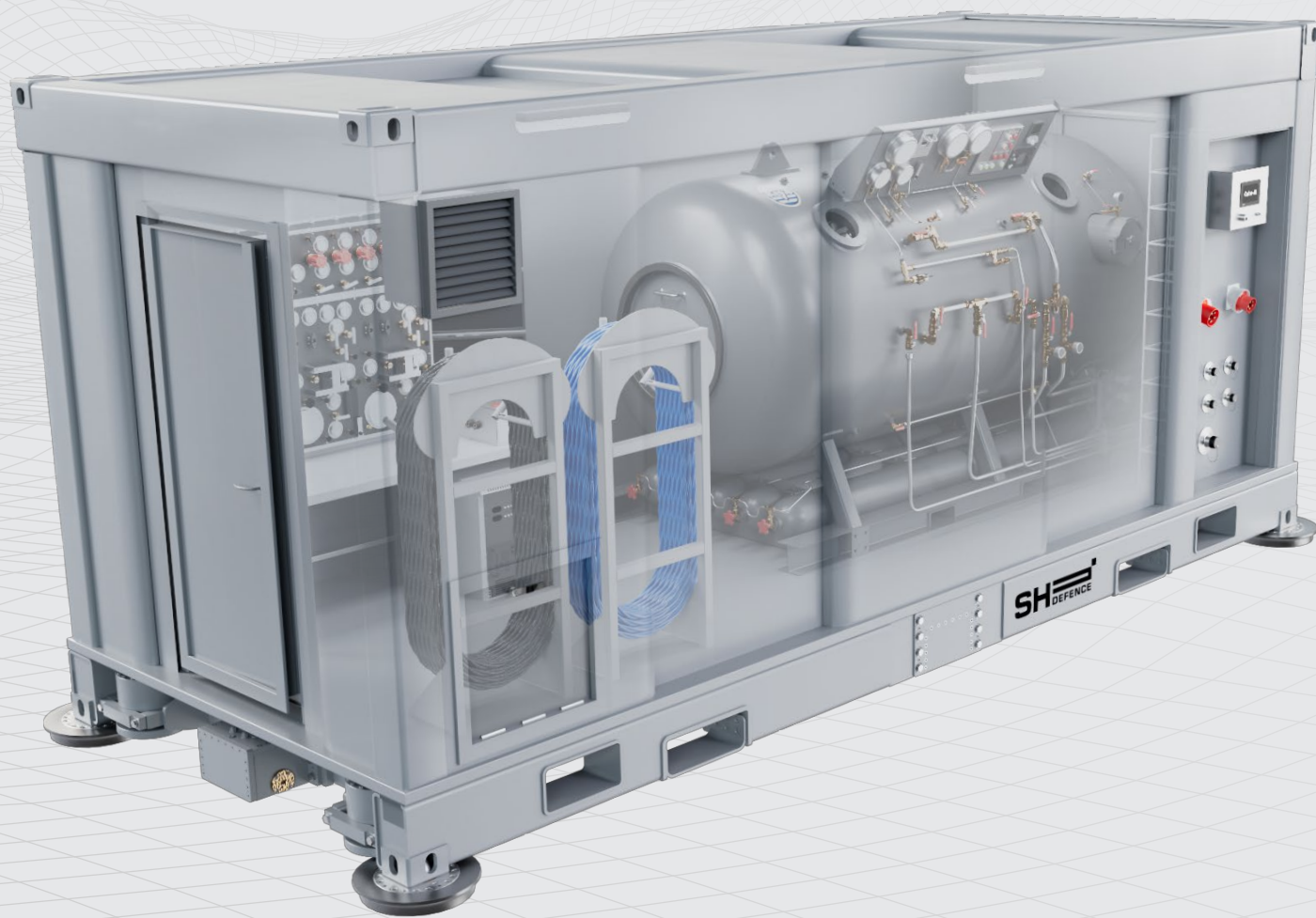
Weight range

5 ton - 13 ton





[MARITIME SEARCH AND RESCUE - SAR]
Diver support / hyperbaric chamber



Diver support/hyperbaric chamber

Essential support for diving missions

Potential system manufactures:



Applications

A diver support/hyperbaric chamber module provides crucial facilities for navy diving teams engaged in underwater operations. This unit supports diving missions by offering decompression capabilities, medical treatment for decompression sickness, and a controlled environment for deep-sea recovery efforts. It is vital for ensuring diver safety and operational efficiency during extended underwater assignments

Options

Mission-dependending, a diver support/hyperbaric chamber module would contain one or more of the below options:

- **Single or multi-compartment chambers:** Configurable layouts with one or more compartments for decompression and treatment.
- **Life support systems:** Oxygen supply, carbon dioxide scrubbing and pressure monitoring equipment.
- **Medical support equipment:** Integrated monitoring systems for patient care, including heart rate, oxygen saturation and emergency medical equipment.
- **Climate control systems:** HVAC units for temperature regulation and humidity control.
- **Compressor and gas storage:** High-pressure air supply and gas mixing systems for controlled decompression procedures.
- **Communications system:** Internal and external communication capabilities for coordination with dive teams and medical personnel.
- **Emergency power supply:** Uninterruptible power sources to ensure continued chamber operation in case of power failure.

Considerations

Several factors should be considered when designing the diver support/hyperbaric chamber module:

- **Space utilisation:** Efficient internal arrangement to accommodate divers while allowing safe operation of medical and decompression equipment.
- **Weight distribution:** Proper balance to maintain vessel stability when deployed.
- **Structural integrity:** High-strength materials to withstand pressure fluctuations and external environmental conditions.
- **Safety and security:** Compliance with pressure vessel standards, emergency egress and secure access control.
- **Integration with diving operations:** Seamless coordination with diving equipment, gas supply systems and medical response teams.
- **Lead time:** Availability of specialised components, production timelines and logistical considerations.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions
20' ISO container



Material
High strength steel



Design Temperature
-20°C to +45°C



Weight range
5 ton - 13 ton

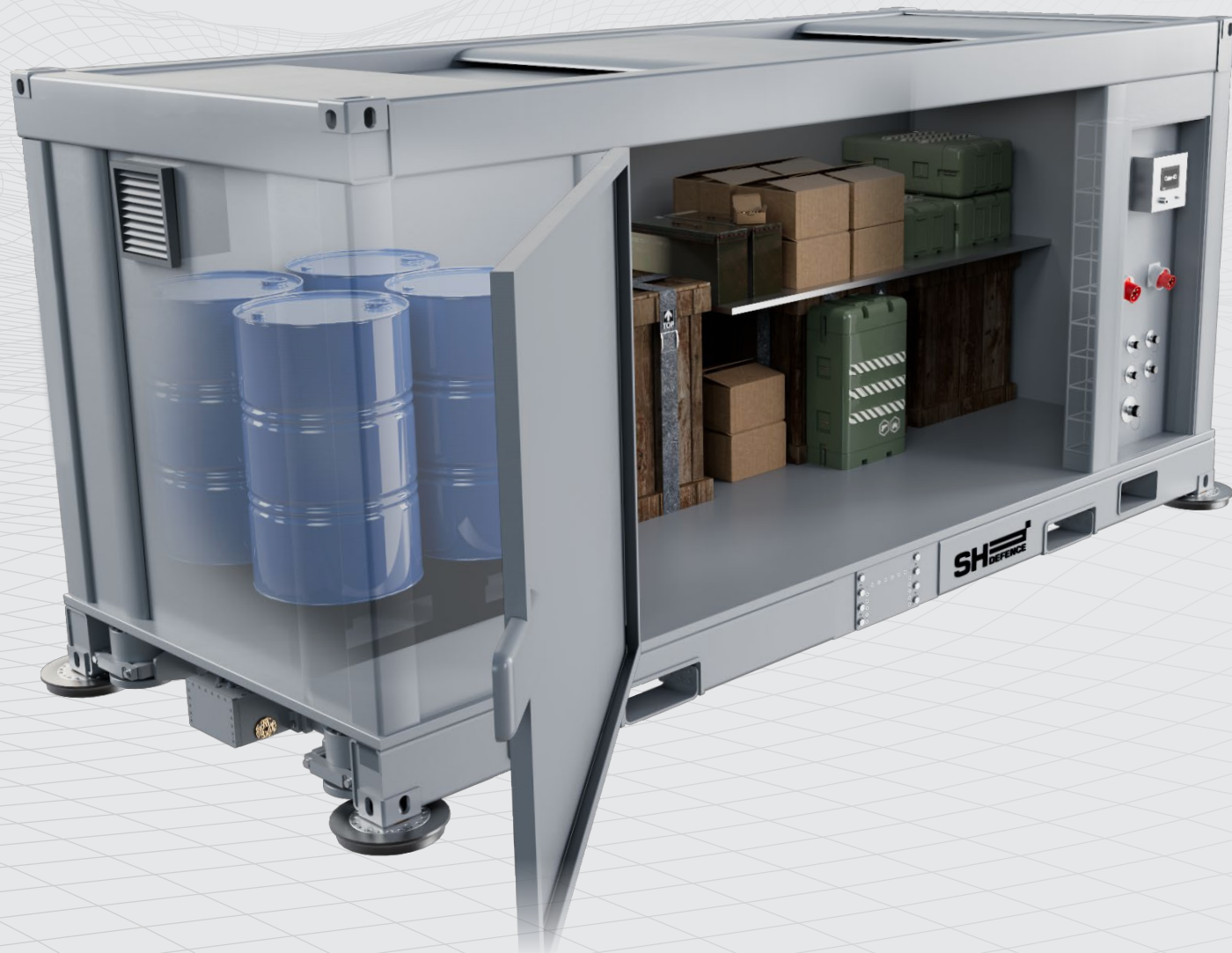




MIO

[MARITIME INTERDICTION OPERATIONS]

General stores



General stores

Support for mission logistical needs

Applications

The general stores mission module would be designed to support the logistical needs of a naval vessel, facilitating the storage, organisation and management of various supplies including foodstuffs, medical supplies, spare parts and other essential materials needed by the ship's crew. The general stores module will enhance operational efficiency, reduce time spent on resupply and optimise the use of limited space on board.

Options

General stores modules can take many forms, depending on the type of items to be stored:

- **Food:** Refrigerated or freezer storage for perishable foods. Includes heavy-duty shelving and racking, stackable food bins and crates, and secured storage areas preventing items from shifting during transport.
- **Medical supplies:** Climate-controlled storage with temperature and humidity control. Includes stainless steel and antimicrobial interior lining and non-slip and antibacterial flooring. Equipment includes adjustable shelving and racks, lockable storage cabinets, shock-resistant containers, cold chain storage, and a workstation.
- **Maintenance tools:** Transportable workshop designed to support maintenance operations. Non-slip, oil-resistant flooring, heavy-duty workbenches, tool cabinets and pegboards, lockable storage units, and spare parts storage.
- **Clothing:** A secure, climate-controlled container designed to store, organise, and distribute uniforms, protective gear, and other clothing items. With adjustable shelving and racks, hanging rails and lockers.

Considerations

Several key factors must be considered in the design of the module to ensure its functionality and effectiveness. These considerations include:

- **Space utilisation:** The design should maximise storage efficiency while allowing for easy access to all materials.
- **Weight distribution:** Proper weight distribution is critical to ensure stability during transport and use.
- **Environmental conditions:** The climate inside the general stores unit must be closely monitored. Appropriate ventilation systems must be implemented to prevent build-up of harmful gases or odours.
- **Access and workflow:** The layout should allow for efficient workflow and easy access to materials.
- **Lead time:** The lead time for designing, procuring, and delivering the general stores unit can vary depending on the complexity of the customisation options.
- **Maintenance requirements:** Regular maintenance of the general stores mission module is essential to ensure its continued functionality and safety.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

20' ISO container



Material

High strength steel



Design Temperature

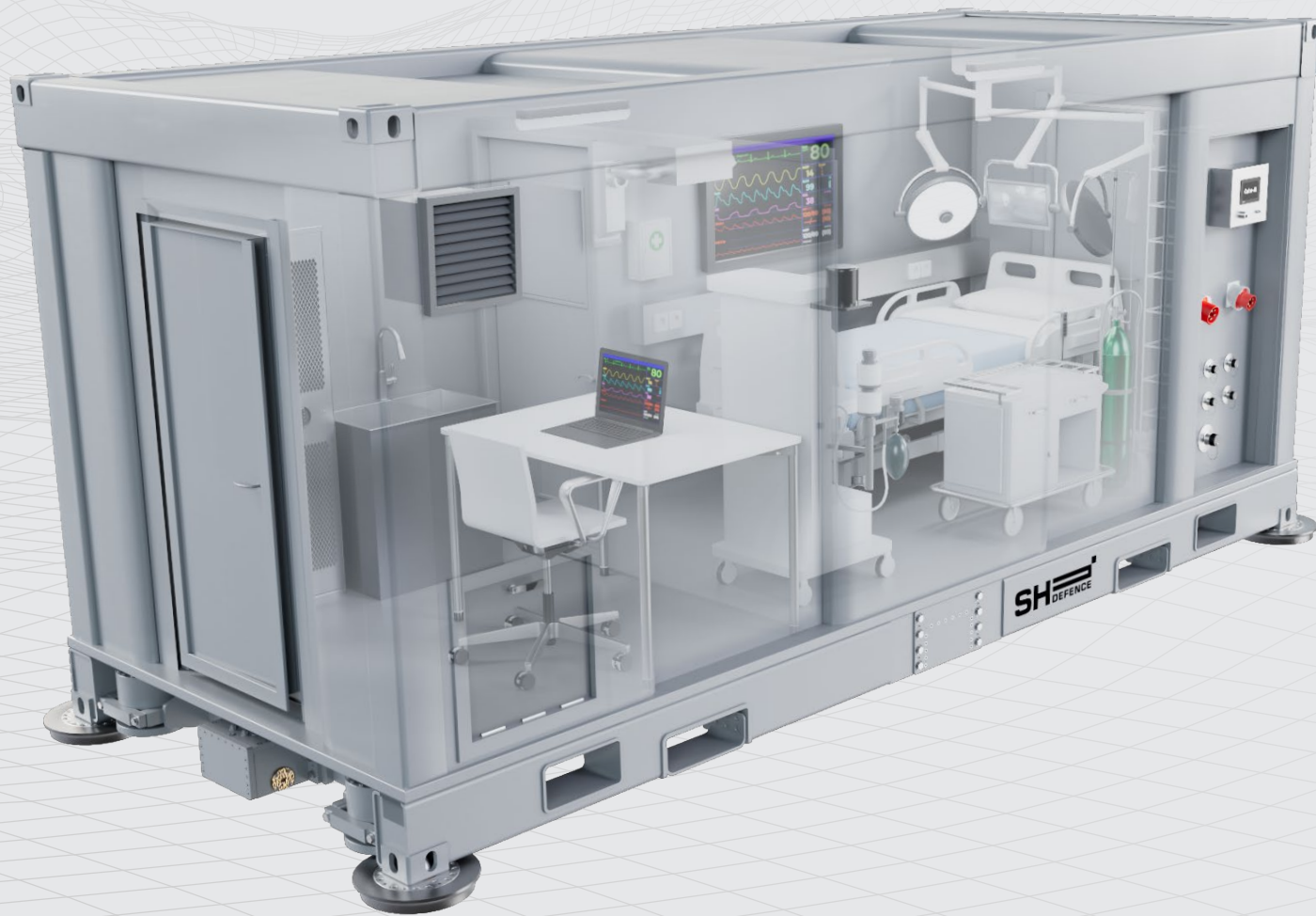
-20°C to +45°C



Weight range

5 ton - 13 ton





Life support

Ensuring the health, safety and well-being of crew

Applications

The life support unit is designed to ensure the health, safety and well-being of embarked personnel, civilians in disaster relief operations and other military patients by providing critical life support functions. Life support units include one or more systems for air purification, oxygen generation and carbon dioxide removal, water treatment, temperature and humidity control, heat and power generation, and waste management.

Options

The life support unit can be tailored to meet various mission-specific requirements. Options can include:

- **Air purification and oxygen generation:** Oxygen concentrators, scrubbers and filters ensure breathable air by maintaining adequate oxygen levels and removing harmful gases and trace contaminants.
- **Water treatment:** Water treatment systems provide unlimited desalinated potable or technical water through filtration and purification.
- **Temperature and humidity control:** Heating, ventilation and air conditioning (HVAC) systems maintain a comfortable and safe living environment.
- **Heat and power generation:** A boiler and a genset ensure provision of heat and power generation in harsh environments.
- **Waste management:** Systems to ensure that biological and other waste materials are handled appropriately.

Considerations

Key considerations to ensure the safety, comfort and operational efficiency of the crew include:

- **Space utilisation:** The internal layout should allow easy access to all critical components for maintenance and operational needs.
- **Redundancy and reliability:** Life support systems are mission-critical, and their failure could endanger the crew. Redundant systems for key functions such as oxygen generation, air circulation and temperature control must be included.
- **Energy consumption:** The life support unit's systems should be energy-efficient, as they will rely on the ship's power supply.
- **Maintenance requirements:** Scheduled maintenance and system checks should be incorporated into the operational plan to minimise downtime.
- **Lead time:** It is critical to factor in the time required for system design, sourcing, testing and integration to ensure the unit is ready for deployment in a timely manner.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions
20' ISO container



Material
High strength steel



Design Temperature
-20°C to +45°C

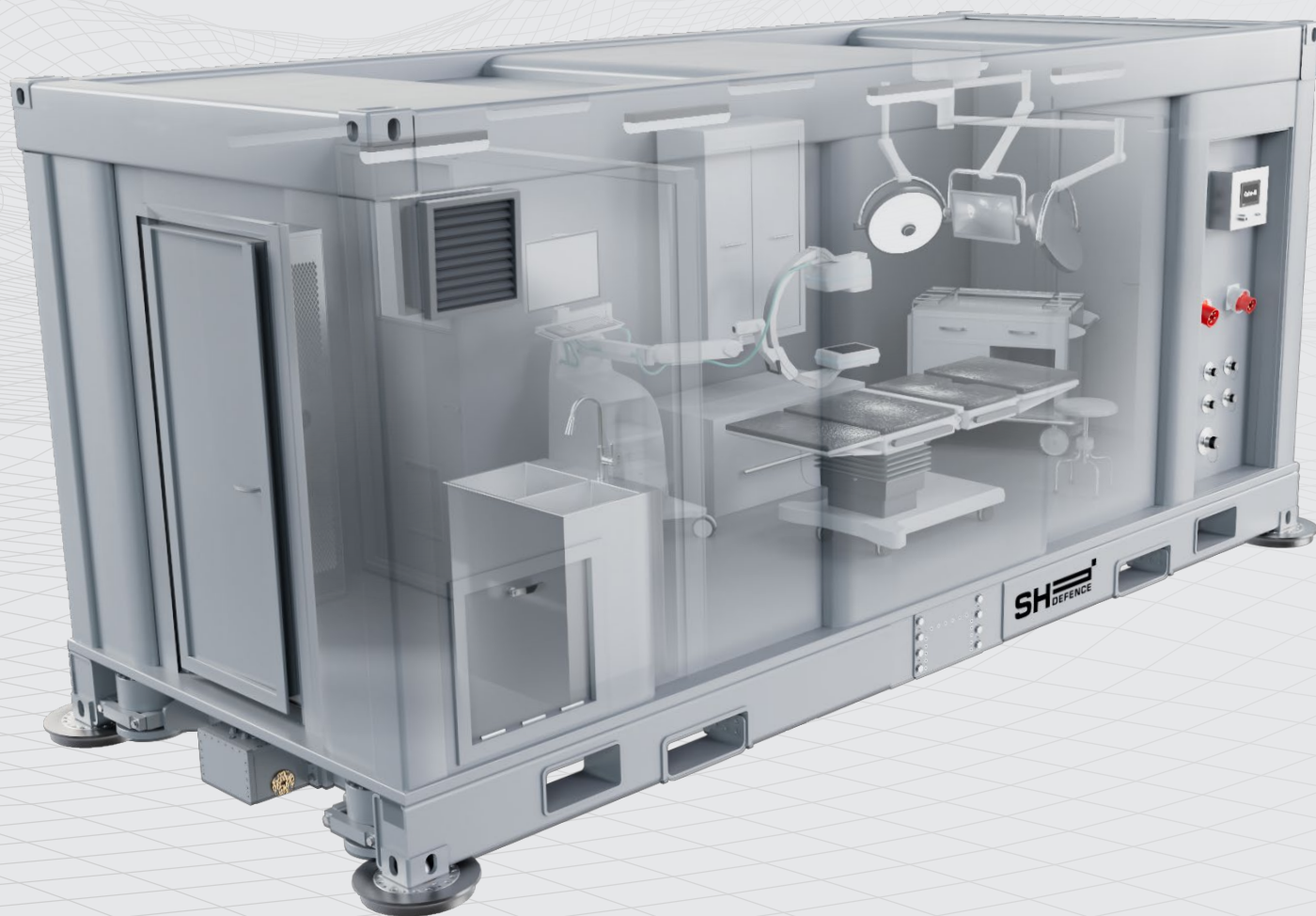


Weight range
5 ton - 13 ton





[MARITIME SEARCH AND RESCUE - SAR]
Medical unit



Medical unit

Essential healthcare services in any operational environment

Potential system manufactures:



Applications

A medical unit serves as a deployable medical facility, providing essential healthcare services to crew members and supporting humanitarian and disaster relief operations. The primary functions of a medical unit comprise emergency and trauma care, primary healthcare and sickbay services, surgical and intensive care capabilities, infectious disease isolation and quarantine, pharmacy and medical supply storage and humanitarian assistance and disaster relief.

Options

A medical unit can be configured in a variety of ways to match the operational landscape:

- **General medical module:** Includes patient examination table, diagnostics tools such as ECG, ultrasound, blood pressure monitors, oxygen supply and defibrillator, secure pharmacy and medication storage. It supports primary healthcare, emergency care, and medical support for personnel.
- **Surgical module:** Includes surgical table and overhead lighting, sterile surgical instruments and autoclave, ventilators and anaesthesia system, and ICU patient monitoring system. The module is designed for emergency and minor surgeries. It supports trauma care, life-saving procedures, and post-operative recovery.
- **Disease control:** Includes negative pressure ventilation and HEPA filters, separate isolation beds and sanitation units, PPE storage and decontamination station, and medical waste disposal system. It is used for infection prevention, quarantine, and treatment of contagious diseases.

Considerations

The design and layout of the medical unit must address several key factors:

- **Space optimisation:** Efficient use of limited space to accommodate medical personnel, patients and necessary equipment.
- **Environmental controls:** Maintaining controlled temperature, humidity and air quality to ensure a sterile and comfortable treatment environment.
- **Ergonomics and accessibility:** Easy access for medical staff, patients and stretchers, with considerations for mobility-impaired personnel.
- **Infection control:** Implementation of strict hygiene protocols, handwashing stations, and medical waste disposal systems.
- **Electrical and power requirements:** Sufficient power supply for medical equipment, backup power sources and uninterruptible power supply (UPS) systems for critical devices.
- **Water and sanitation:** Availability of clean water for medical use, proper drainage and waste management systems.
- **Integration with shipboard systems:** Compatibility with existing naval medical infrastructure, communication networks and data systems.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions
20' ISO container



Material
High strength steel



Design Temperature
-20°C to +45°C



Weight range
5 ton - 13 ton

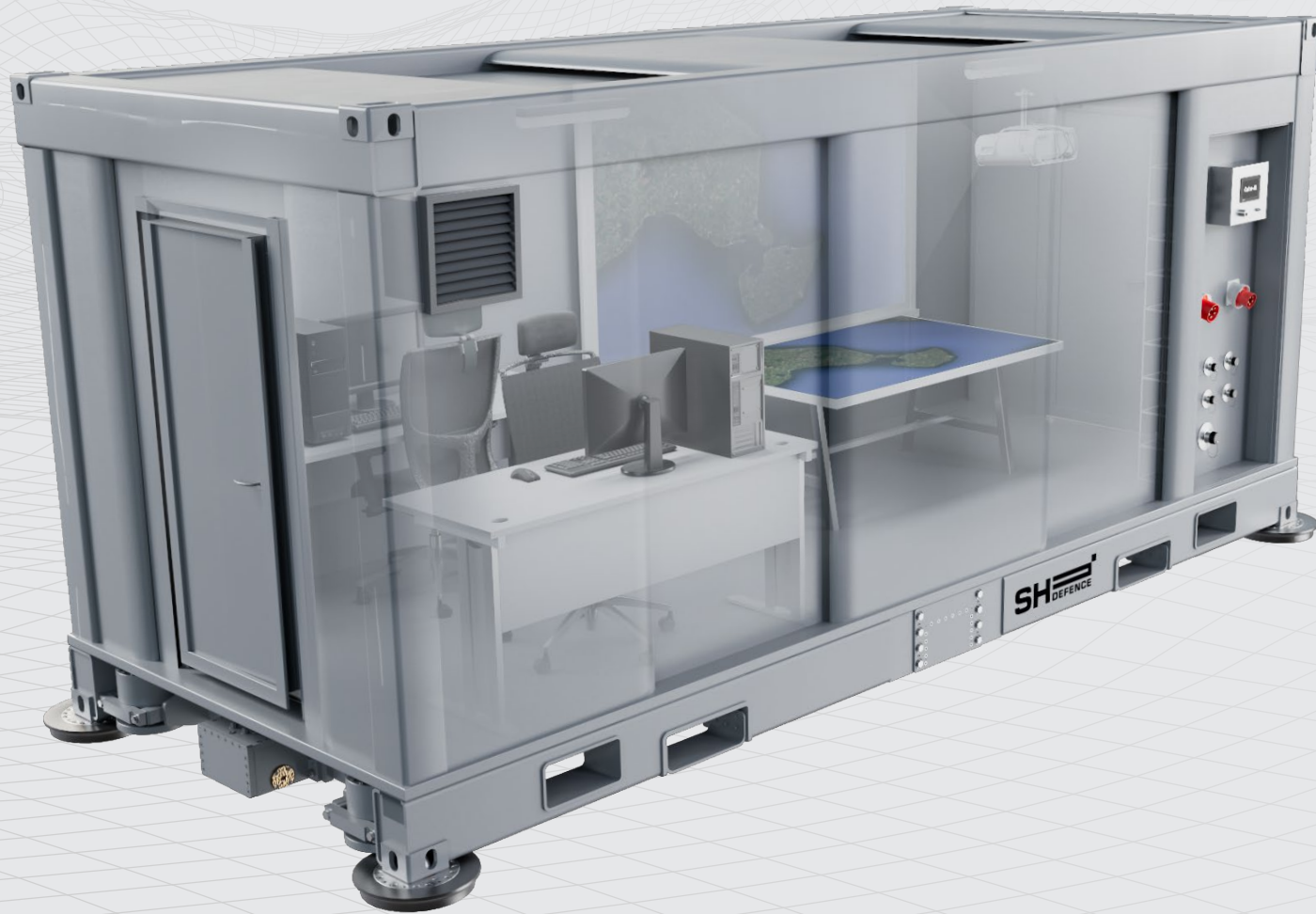




MIO

[MARITIME INTERDICTION OPERATIONS]

Office / mission planning



Office/mission planning

For mission planning, coordination, and administration

Applications

An office/mission planning module would be designed to serve as a mobile, self-contained workspace for personnel involved in mission planning, coordination, and administration. It can be used in a variety of scenarios, including military operations, disaster response, and humanitarian missions. This module provides a secure and organised environment for planning, communication, data processing, and mission support tasks.

Options

Mission-dependent, the office/mission planning module can be supplied in different configurations:

- **Standard office:** Includes desks, chairs, filing cabinets, and office equipment such as printers and computers. It is configured for team meetings, briefings, and mission analysis.
- **Mission planning:** Includes large display screens, projectors, and digital mapping systems for mission tracking and visualisation, workstations for planners, analysts, and logistics personnel. Equipped with mission database, secure servers, and data storage.
- **Hybrid configuration:** Combines elements of standard office and mission planning configurations. May include reconfigurable seating and workspace options to accommodate different team sizes.
- **Mobile command centre:** Includes command and control equipment, i.e. large-scale communication terminals, advanced satellite dishes and high-security network. Designated for operational leaders and key decision-makers to execute planning and coordination activities.

Considerations

Considerations to be made in the design of the module include:

- **Space efficiency:** Space can be maximised through modular and foldable furniture, flexible workstations and efficient storage solutions.
- **Security:** The module must be designed with secure access points, tamper-proof data storage, and secure communication channels to protect mission information.
- **Climate control:** Environmental conditions inside the module need to be controlled with built-in HVAC systems maintaining comfort and operational efficiency in various climates.
- **Power supply:** Sufficient power systems must be in place to support equipment and systems.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

20' ISO container



Material

High strength steel



Design Temperature

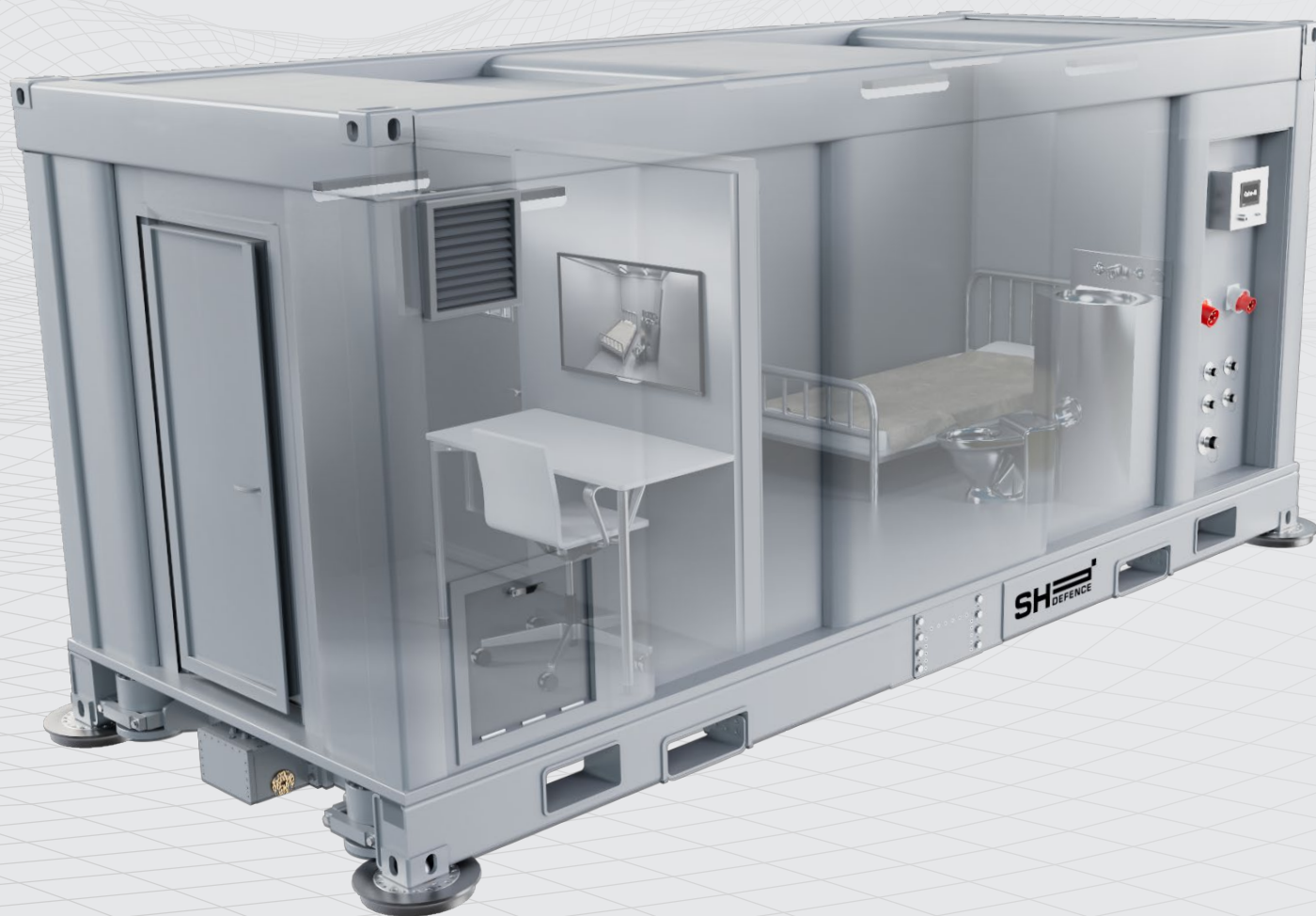
-20°C to +45°C



Weight range

5 ton - 13 ton





Prison depot

Secure and humane containment for detainees, ensuring safety and compliance with international standards

Applications

A prison depot module is designed to provide a secure, self-contained facility for the storage and management of various prison-related materials, equipment, and supplies. It can be used for housing tools, uniforms, documents, and other logistical items needed for prison operations or corrections-related missions. **Third Geneva Convention** outlines the minimum acceptable conditions for the detention of prisoners of war, including provisions for accommodation, food, clothing, hygiene, and medical care. These standards ensure that detainees are treated humanely and their basic needs are met.

Options

This module can be deployed to serve as correctional facilities, mobile prison support operations, or military detention applications.

- **Standard storage:** Designed for secure storage of prison-related materials such as inmate uniforms, equipment, and supplies. Features heavy-duty shelving, secure storage bins, and lockable compartments to ensure items are safeguarded.
- **Logistics and supply:** Suitable for managing food, medical supplies, uniforms, and repair equipment required by prison staff. Includes optimised shelving and racking systems for storing supplies and inventory tracking systems for logistics management.
- **Detention/cell:** Designed for the temporary housing of detainees or the storage of confiscated property. Includes reinforced cells with secure bars or partitions, surveillance equipment, and communication systems.

Considerations

Considerations to be made in the design of the module include:

- **Security:** Given the high-security nature of the prison depot, the module must be designed with reinforced doors, secure locks, and monitored access points.
- **Environmental control:** The module must be equipped with appropriate climate control systems to ensure the comfort and safety of personnel.
- **Space utilisation:** Items should be organized in a way that minimises wasted space while maintaining ease of access and security.
- **Fire safety:** The module should include fire suppression systems, emergency exits, and flame-resistant materials to ensure safety in case of fire or other emergencies.
- **Durability:** The design must account for exposure to harsh environments, with materials that can withstand wear and tear, extreme weather conditions, and potential impacts during transport.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions
20' ISO container



Material
High strength steel



Design Temperature
-20°C to +45°C



Weight range
5 ton - 13 ton

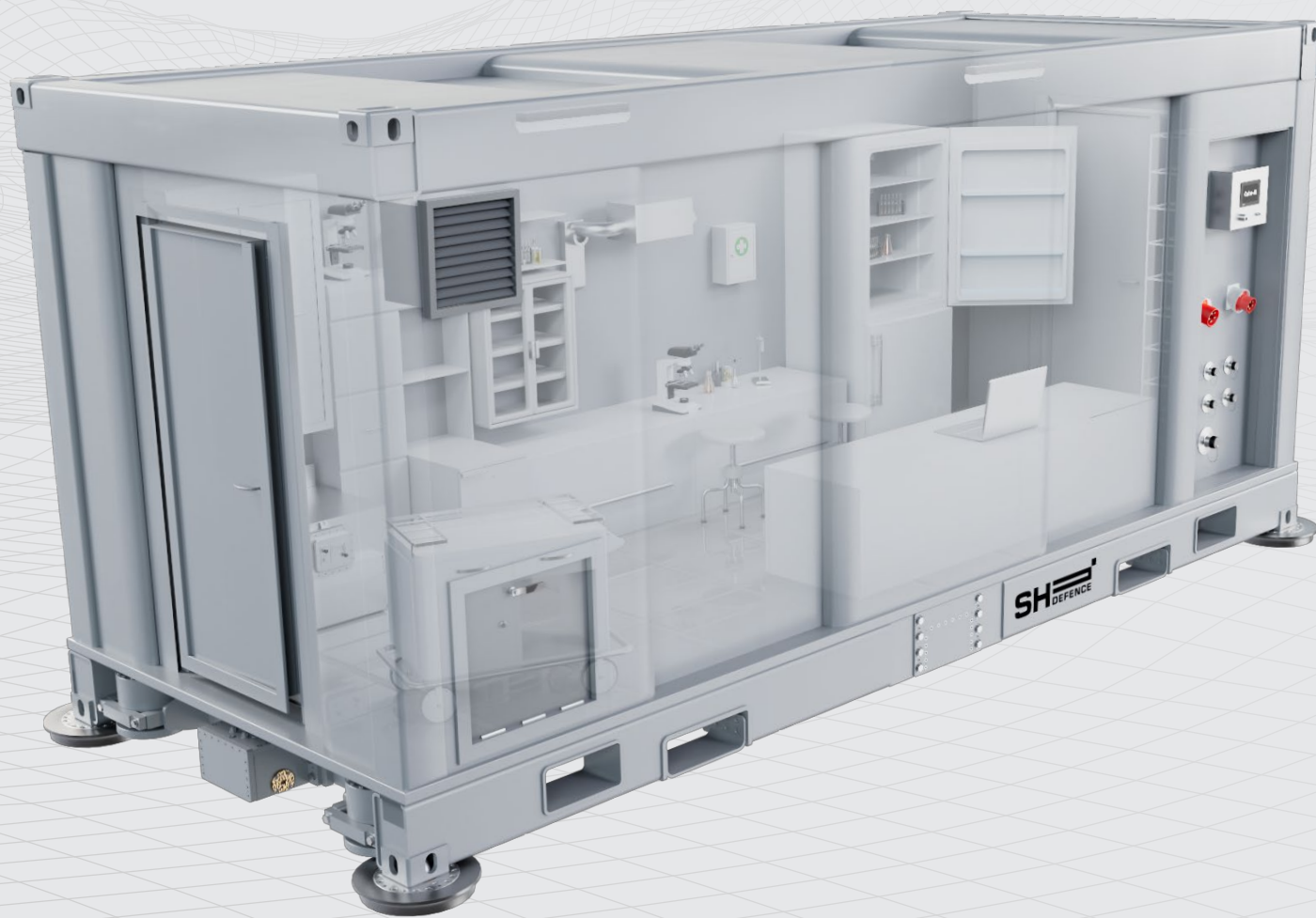




RV

[RESEARCH VESSEL - RV]

Scientific unit



Scientific unit

Mobile laboratory, research station, or environmental monitoring unit

Applications

A scientific unit can be designed to serve as a mobile laboratory, research station, or environmental monitoring unit for scientific missions in remote, hazardous, or temporary locations. It is ideal for applications such as marine research, climate monitoring, medical testing, materials analysis, and forensic investigations. The module provides a secure, controlled environment for conducting experiments, processing samples, and analysing data while ensuring personnel safety and data integrity.

Options

The scientific unit can be supplied in different configurations depending on the mission:

- **General-purpose laboratory:** Equipped with workbenches, fume hoods, sinks, and chemical storage cabinets. Designed for various research fields such as biology, chemistry, centrifuges, and sample storage units.
- **Medical and biolab:** Designed for disease diagnostics, sample analysis, and medical research. Can be configured as a mobile medical testing unit for remote field operations and epidemic response.
- **Environmental monitoring:** Outfitted with specialised sensors for air, water, and soil quality testing. Used for ecological studies, pollution monitoring, and climate research.
- **Materials testing and engineering lab:** Equipped with non-destructive testing tools, hardness testers, and precision measurement instruments.
- **Forensic analysis:** Set up for crime scene investigation, evidence processing, and digital forensics. Can integrate secure data management and biometric identification systems.

Considerations

Considerations to be made in the design of the module include:

- **Environmental control:** The module should be equipped with HVAC systems, HEPA filter, and temperature regulation.
- **Safety and containment:** Depending on the research type, biosafety measures, chemical containment, and radiation shielding may be required.
- **Power supply and redundancy:** To support critical lab operations, the module must have backup power sources such as battery banks or generator connections.
- **Data security and connectivity:** For digital research and data-intensive applications, the module should include secure networking, cloud connectivity, and encrypted storage.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

20' ISO container



Material

High strength steel



Design Temperature

-20°C to +45°C



Weight range

5 ton - 13 ton





[MARITIME INTERDICTION OPERATION - MIO]
Storage (food)



Storage (food)

Safe storage of perishable and non-perishable food supplies

Applications

The storage module for food provides a controlled environment for the safe storage of perishable and non-perishable food supplies in naval operations. It ensures food quality, minimises spoilage, and supports extended missions by maintaining optimal storage conditions. The module can be deployed on various naval platforms, including surface ships and support vessels, enhancing logistical efficiency and operational readiness.

Options

The storage module is available in multiple configurations to meet specific operational needs:

- **Dry storage:** Ambient-temperature storage for packaged and non-perishable food items.
- **Refrigerated storage:** Temperature-controlled storage for perishable food, maintaining freshness over extended periods.
- **Frozen storage:** Deep-freeze storage for long-term preservation of meat, fish, and other frozen supplies.
- **Combination storage:** A modular solution with separate compartments for dry, refrigerated, and frozen food, offering flexibility in storage management.

Considerations

Important considerations for the design of the storage module include:

- **Temperature control:** Ensure appropriate refrigeration or freezing systems are in place.
- **Insulation and ventilation:** Adequate insulation and airflow to maintain food quality.
- **Storage capacity:** Optimise space for various food types while allowing easy access.
- **Power supply:** Reliable energy source to maintain refrigeration and freezing functions.
- **Hygiene and maintenance:** Use corrosion-resistant materials and easy-to-clean surfaces for compliance with food safety regulations.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions
20' ISO container



Material
High strength steel

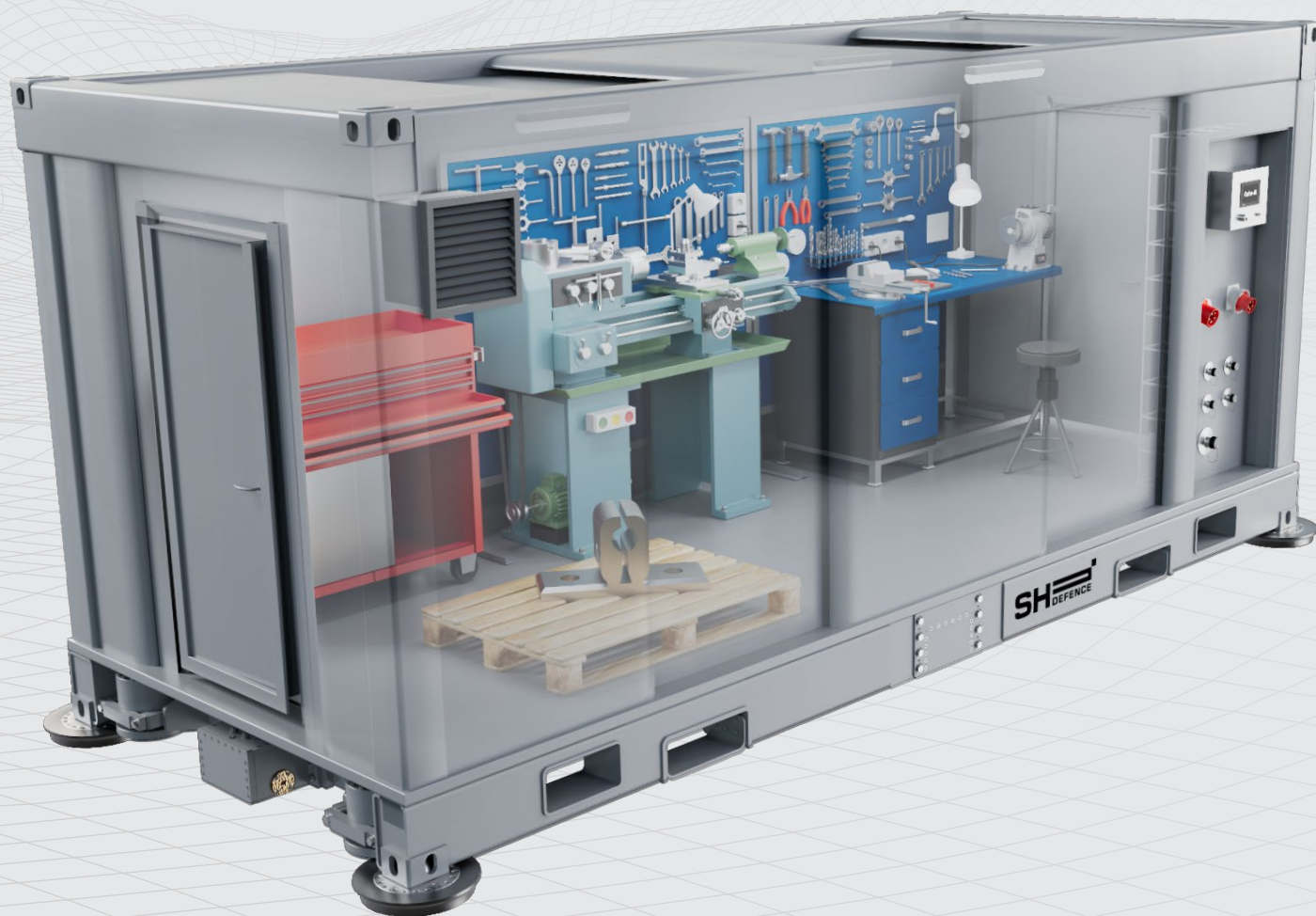


Design Temperature
-20°C to +45°C



Weight range
5 ton - 13 ton





Workshop

Containerised multi-mission module for routine and emergency repair tasks

Applications

The workshop module provides a dedicated space for maintenance, repairs, and fabrication in naval operations. It enables personnel to service equipment, tools, and machinery, ensuring operational readiness during deployments. It enhances self-sufficiency by reducing reliance on shore-based facilities and supports both routine and emergency repair tasks, contributing to sustained operational effectiveness.

Options

The workshop module is available in different configurations to suit specific operational requirements:

- **General maintenance workshop:** Equipped with workbenches, tool storage, and power outlets for routine maintenance and repairs.
- **Mechanical workshop:** Includes lathes, milling machines, and welding stations for metalwork and mechanical servicing.
- **Electrical workshop:** Features specialised tools, diagnostic equipment, and secure wiring for electrical repairs.
- **Multi-purpose workshop:** A flexible configuration combining mechanical, electrical, and general maintenance capabilities.

Considerations

The following items should be considered in the design of the module:

- **Layout and space efficiency:** Optimise workspace design for productivity and tool accessibility.
- **Ventilation and safety:** Ensure proper airflow, fume extraction, and fire suppression systems.
- **Power and lighting:** Provide stable power sources and adequate lighting for precision work.
- **Storage and security:** Implement secure tool storage and safety measures for hazardous materials.
- **Durability and maritime suitability:** Use corrosion-resistant materials and robust construction for naval environments.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions
20' ISO container



Material
High strength steel



Design Temperature
-20°C to +45°C



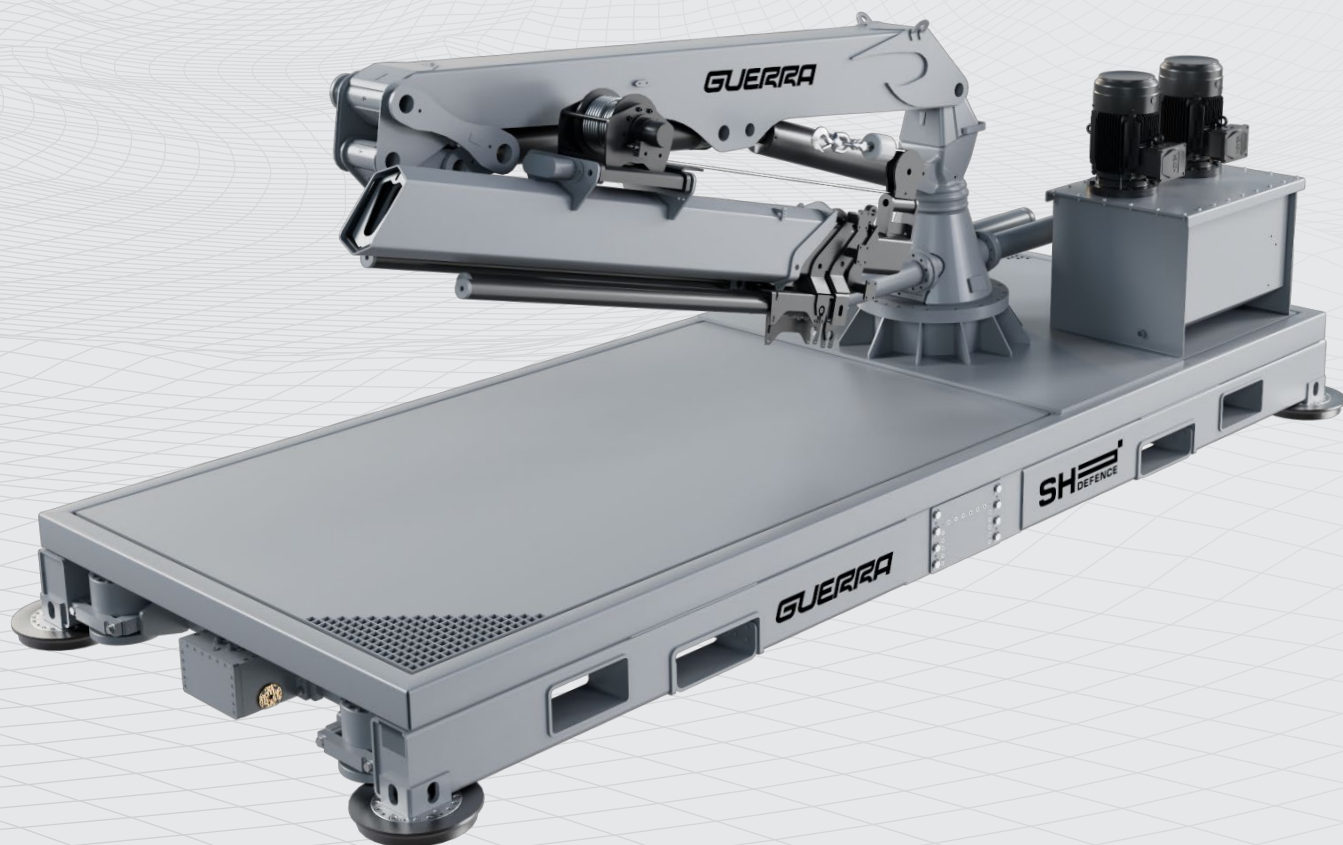
Weight range
5 ton - 13 ton





[MARITIME INTERDICTION OPERATION - MIO]

Cargo crane



Cargo crane

Onboard lifting and handling of various cargo types

Potential system manufactures:



Applications

The cargo crane module enhances naval vessels’ operational flexibility by enabling onboard lifting and handling of various cargo types, including supplies, equipment, and mission-specific payloads. This capability is crucial for replenishment at sea, humanitarian assistance, disaster relief operations, and efficient loading and unloading in ports without shore-based crane infrastructure. Integrating such modules allows ships to maintain autonomy and readiness across diverse mission profiles.

Options

The cargo crane module offers configurations tailored to specific operational requirements:

- **Guerra MC 1200.55A6 Crane:** Mounted on a base frame, this configuration fits within a 20-foot mission bay, providing robust lifting capabilities suitable for various naval operations.
- **Integrated traverse crane:** This option features a traverse crane capable of moving equipment between multi-mission modules, enhancing internal logistics and operational efficiency aboard the vessel.

Considerations

- **Structural integrity:** Ensure the module’s design accommodates the vessel’s structural constraints, including deck strength and stability during crane operations.
- **Compatibility:** Verify that the crane’s specifications align with the vessel’s power supply, control systems, and existing modular interfaces.
- **Safety measures:** Incorporate safety features such as overload protection, emergency stop functions, and compliance with naval safety standards to protect personnel and equipment.
- **Environmental conditions:** Design the crane to withstand maritime environmental factors, including corrosion from saltwater exposure and operational effectiveness in various weather conditions.
- **Maintenance accessibility:** Ensure that the module allows for easy maintenance access to critical components, facilitating routine inspections and repairs without extensive downtime.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions
20’ ISO container



Material
High strength steel



Design Temperature
-20°C to +45°C

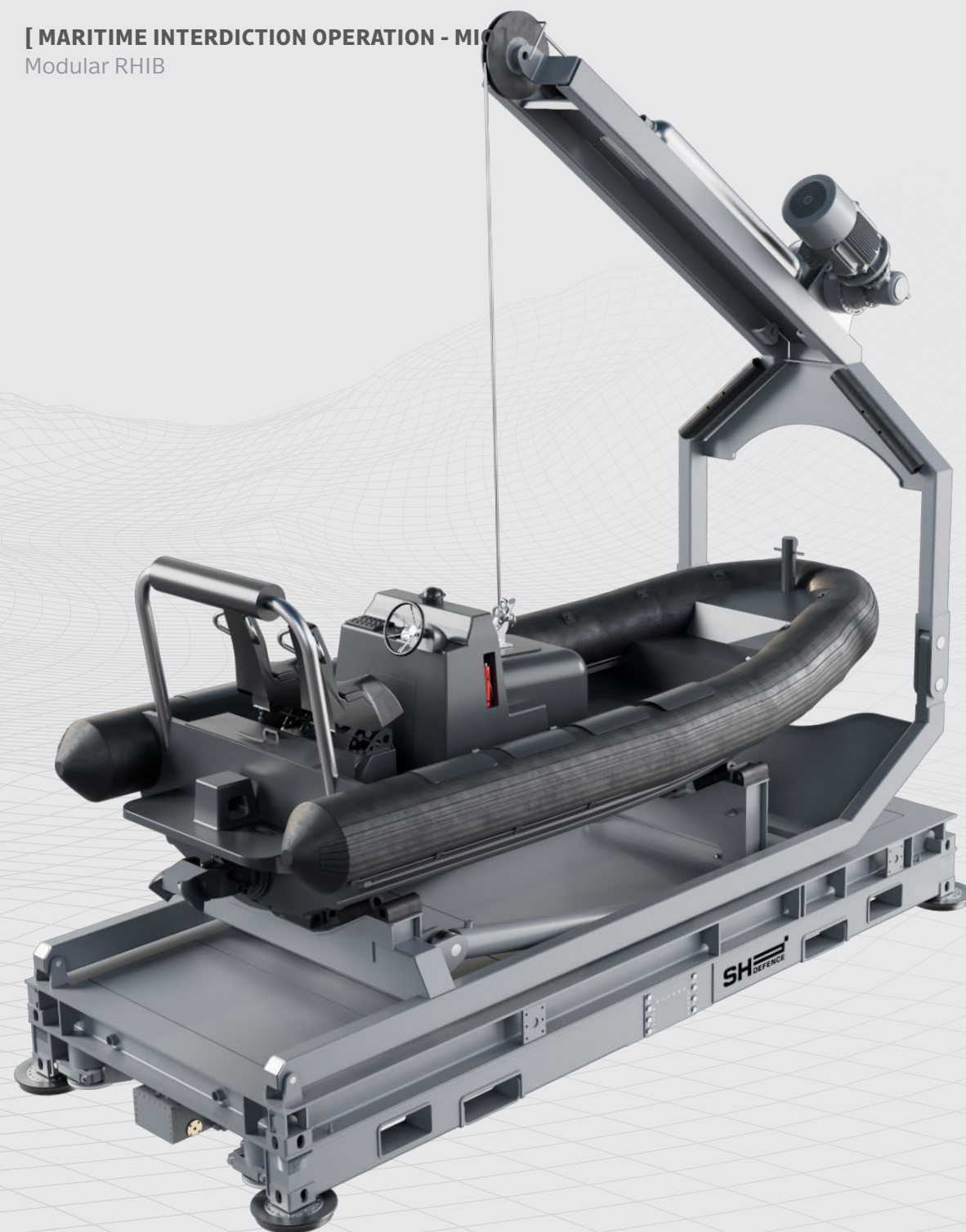


Weight range
5 ton - 13 ton





[MARITIME INTERDICTION OPERATION - MIO] Modular RHIB



Modular RHIB

Containerised multi-mission module for routine and emergency repair tasks

Applications

The RHIB (Rigid-Hulled Inflatable Boat) module provides a solution for the storage, launch, and recovery of RHIBs in naval operations. It supports a wide range of missions, including maritime security, boarding operations, search and rescue, and force protection. Designed for rapid deployment, the module enhances operational flexibility by enabling naval vessels to deploy RHIBs from a dedicated mission bay on the side of the ship.

Options

The RHIB is secured in a cradle and connected to a davit boom during voyage. At deployment of the RHIB, the vessel crew operates the davit from the mission bay control panel. The davit crane lifts the RHIB out of the cradle and safely lowers it into the water, ready for operation.

The proposed configuration consists of a 20' RHIB, a 4 MT davit crane and a base frame with the footprint of a 20' ISO container.

Depending on load requirements, weights, and mission bay infrastructure, it is possible to use other sizes of RHIB and other types of davit cranes.

Considerations

The following items should be considered in the design of the module:

- **Space optimisation:** Balancing RHIB storage with additional equipment, crew access, and maintenance needs is essential.
- **Operating in dynamic marine environments:** The launch and recovery system must allow safe operation in dynamic maritime environments.
- **Integration with vessel communication systems** is necessary for real-time coordination.
- **Environmental protection features**, such as corrosion-resistant materials and proper ventilation are essential for RHIB longevity.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

20' ISO container



Material

High strength steel



Design Temperature

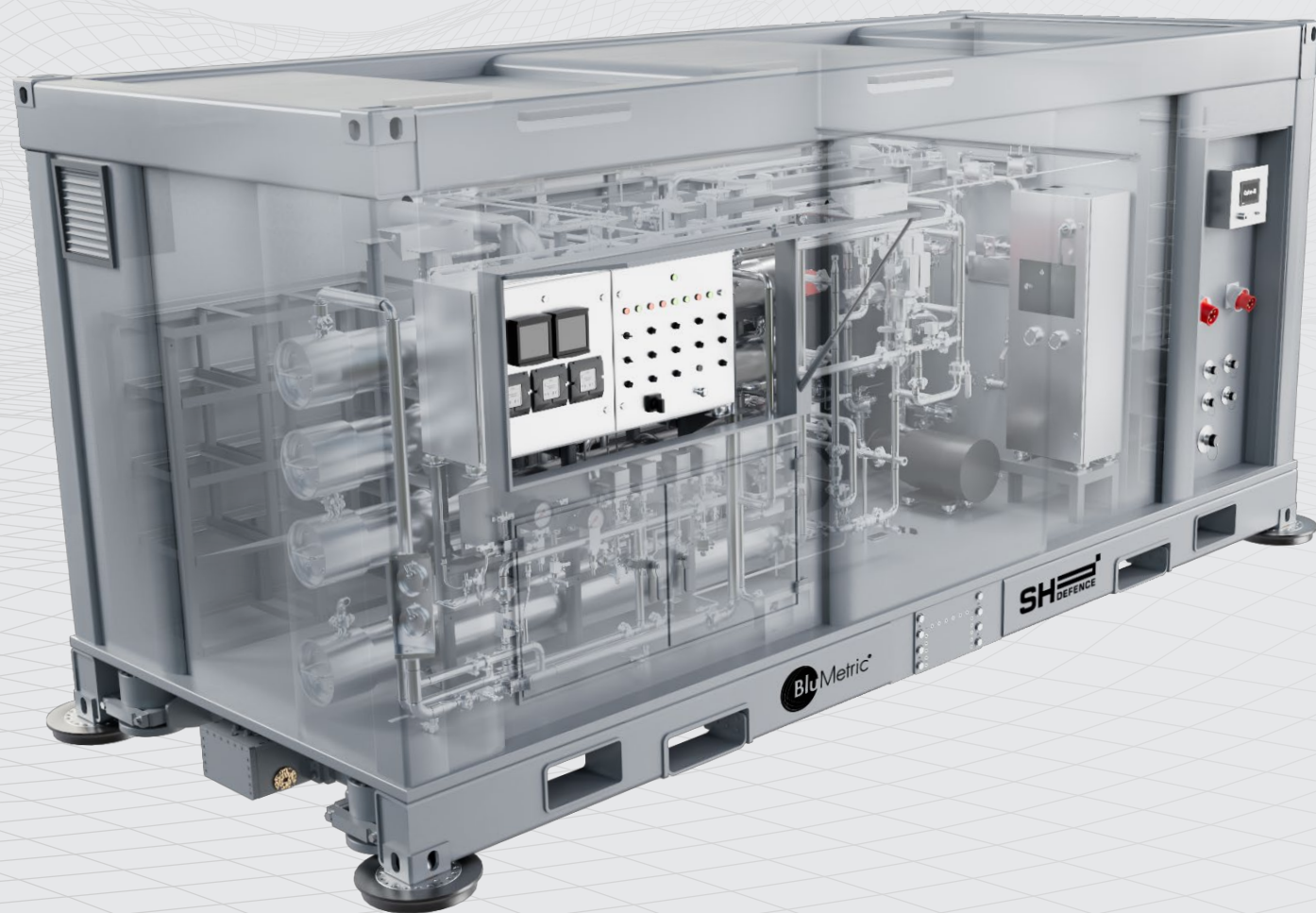
-20°C to +45°C



Weight range

5 ton - 13 ton





Reverse Osmosis Water Purification Unit

Onboard lifting and handling of various cargo types

Potential system manufactures:



Applications

Reverse Osmosis Water Purification Unit (ROWPU) is the solution to provide clean drinking water within hours of set up. The ROWPU is modular in design and is transportable by land, sea, and air. The ROWPU requires minimal consumables and limited operator engagement for its effective operation. The ROWPU's unique purification process is capable of removing >99.99% of all bacteria and viruses, thus halting the spread of water-borne diseases. Additionally, the ROWPU can remove chemical, biological, radiological, and nuclear contaminants from the water. Reliability and confidence, that's what BluMetric's ROWPU offers military operations.

Designed and engineered to be scaled, the ROWPU can support various mission configurations and geographical environments. For ease of transport, the ROWPU is self-contained in 20' containers with built-in onboard power generation capabilities. A single autonomous system produces 150m³/day, and can be scaled up through the integration of additional units.

Features:

Various features of the water purification module are included.

- **Reliable water purification** (source water: fresh, brackish, salt, turbid)
- **Automatic and manual operation**
- **Onboard power** through diesel generator/battery storage, plus local power (when available)
- **20' module:** Fully self-contained
- **Transportable:** truck and air
- **Maximum dissolved solids:** 45,000 ppm
- **Maximum hardness:** 200 mg/L
- **Maximum turbidity:** 350 NTU
- **Nominal hourly output at 20°C:** 1,000 ppm TDS
- **First pass:** 5,250 LPH
 - **Second pass:** 850 LPH
 - **Double pass:** 2,750 LPH

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions
20' ISO container



Material
High strength steel



Design Temperature
-20°C to +45°C



Weight range
5 ton - 13 ton

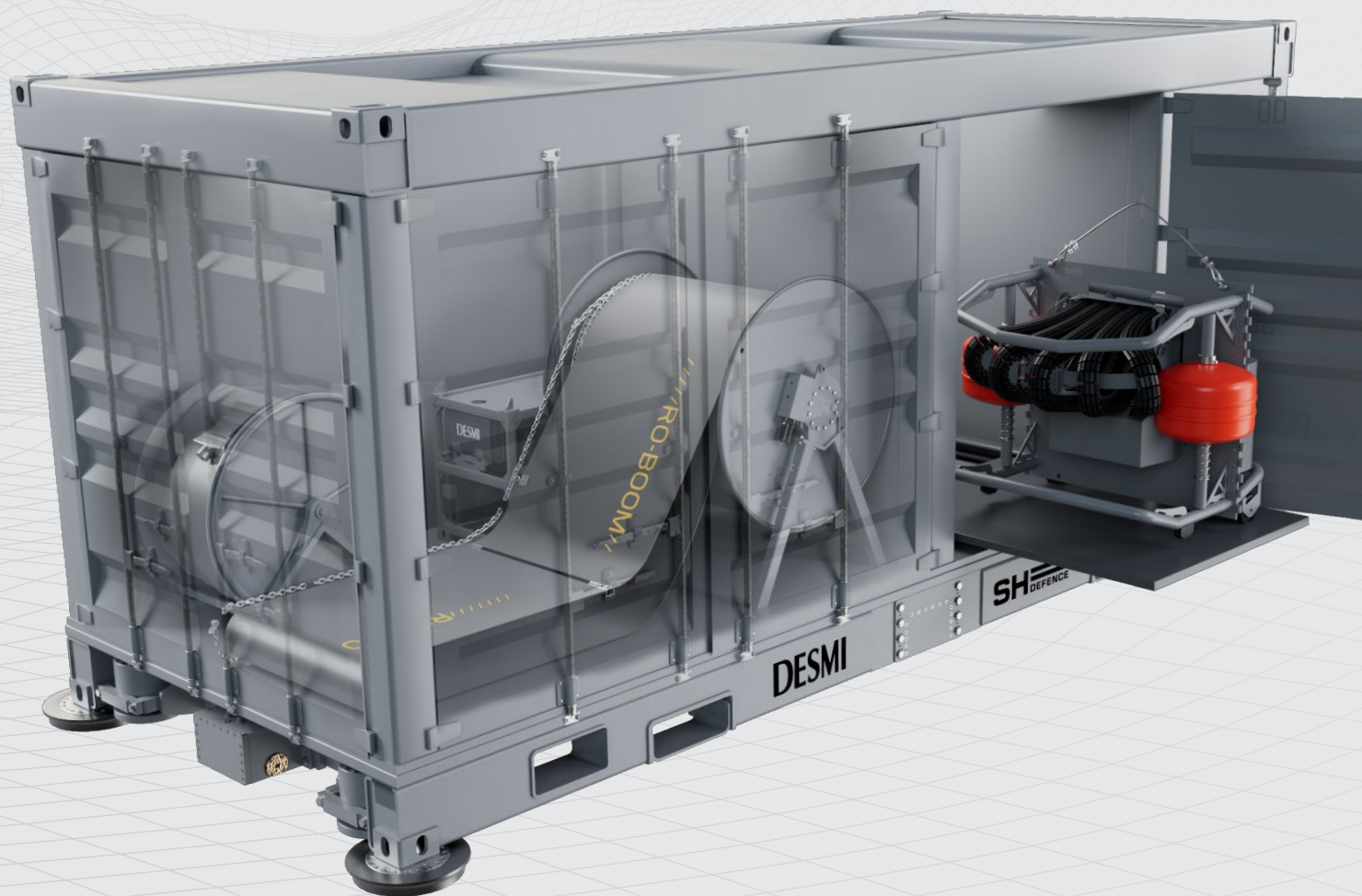




OSR

[OIL SPILL RECOVERY - OSR]

Anti-pollution



DESMI Ro-Boom system

Effective, reliable and durable oil containment boom

Potential system manufactures:

DESMI

Applications

The anti-pollution module is designed for the containment, mitigation, and cleanup of environmental hazards in naval operations. It can provide equipment and resources to manage oil spills, chemical leaks, and waste disposal, ensuring compliance with environmental regulations. Deployed on the EPC it enhances rapid response capabilities, minimises ecological impact, and supports sustainable operations in maritime environments.

Options

The anti-pollution modules are available in different configurations to address specific operational needs:

- **Oil spill response module:** Equipped with skimmers, booms, and absorbents for oil spill containment and recovery.
- **Chemical spill response module:** Contains neutralising agents, protective gear, and decontamination equipment for hazardous spills.
- **Waste management module:** Features waste segregation, compaction, and containment systems for onboard waste processing.
- **Multi-function anti-pollution module:** A combined setup with equipment for oil spill, chemical spill, and waste management operations.

Considerations

Considerations in relation to the design of these types of modules include:

- **Rapid deployment:** Ensure quick access to response equipment for immediate action.
- **Storage and handling:** Use secure compartments for hazardous materials and spill containment tools.
- **Ventilation and safety:** Install proper airflow and protective measures for handling toxic substances.
- **Power and water supply:** Provide energy for pumps, filtration units, and decontamination systems.
- **Environmental compliance:** Design in accordance with international maritime pollution standards.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

20' ISO container



Material

High strength steel



Design Temperature

-20°C to +45°C



Weight range

5 ton - 13 ton

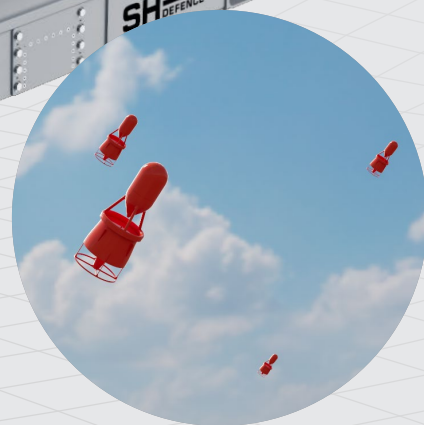
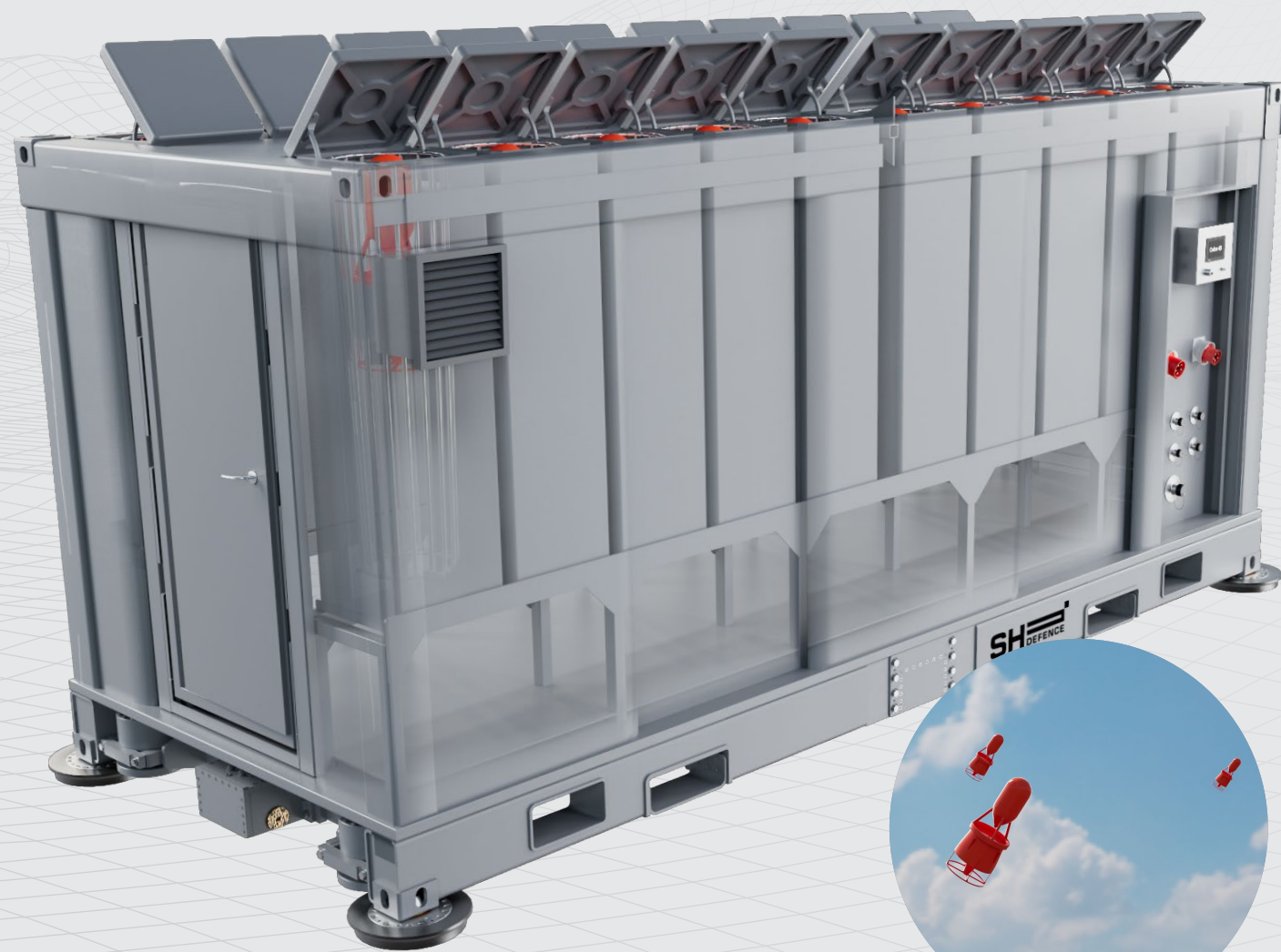




UAW

[UNMANNED AERIAL WARFARE - UAW]

UAV launch and recovery system



UAV launch and recovery system (LARS)

For deployment and recovery of mini-unmanned aerial vehicles

Applications

The UAV LARS module facilitates the deployment and recovery of mini-unmanned aerial vehicles (UAVs) from naval platforms. It supports intelligence, surveillance, reconnaissance, and target acquisition missions, enhancing situational awareness and operational effectiveness in naval operations.

Options

The UAV LARS module offers various configurations to accommodate different mission requirements:

- **Side launch:** The side launcher consists of a dock for multiple UAVs installed on a base frame. A hydraulically operated telescopic arm extends the UAV dock from the side of the vessel, allowing almost vertical launch and recovery of the UAVs. The open base frame structure provides easy access to service and maintenance of docks and UAVs from the mission bay.
- **Top launch:** The top launcher consists of a 20' container with an open top for vertical launch and recovery of UAV swarms. When UAVs return to charge or UAVs from other vessels need to charge before continuing their flight, a skeleton funnel made of bars is extended from the individual UAV dock in order to catch and guide the UAV into the charging dock. The UAV top LARS is provided with a door for easy access to service and maintenance of docks and UAVs.

Considerations

The following items have been considered in the design of the module:

- **Payload compatibility:** The module's design accommodates the specific mini-UAVs intended for use, considering factors like size, weight, and launch mechanisms.
- **Launch and recovery systems:** Reliable systems for the safe and efficient launch and recovery of mini-UAVs have been integrated, accounting for the unique characteristics of each UAV type.
- **Command and control integration:** Seamless interfaces with existing naval command and control systems have been developed to facilitate real-time mission planning, target identification, and operational oversight.
- **Safety protocols:** Stringent safety measures to prevent accidental activation or deployment must be implemented, including fail-safe mechanisms and adherence to operational safety standards.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

20' ISO container



Material

High strength steel



Design Temperature

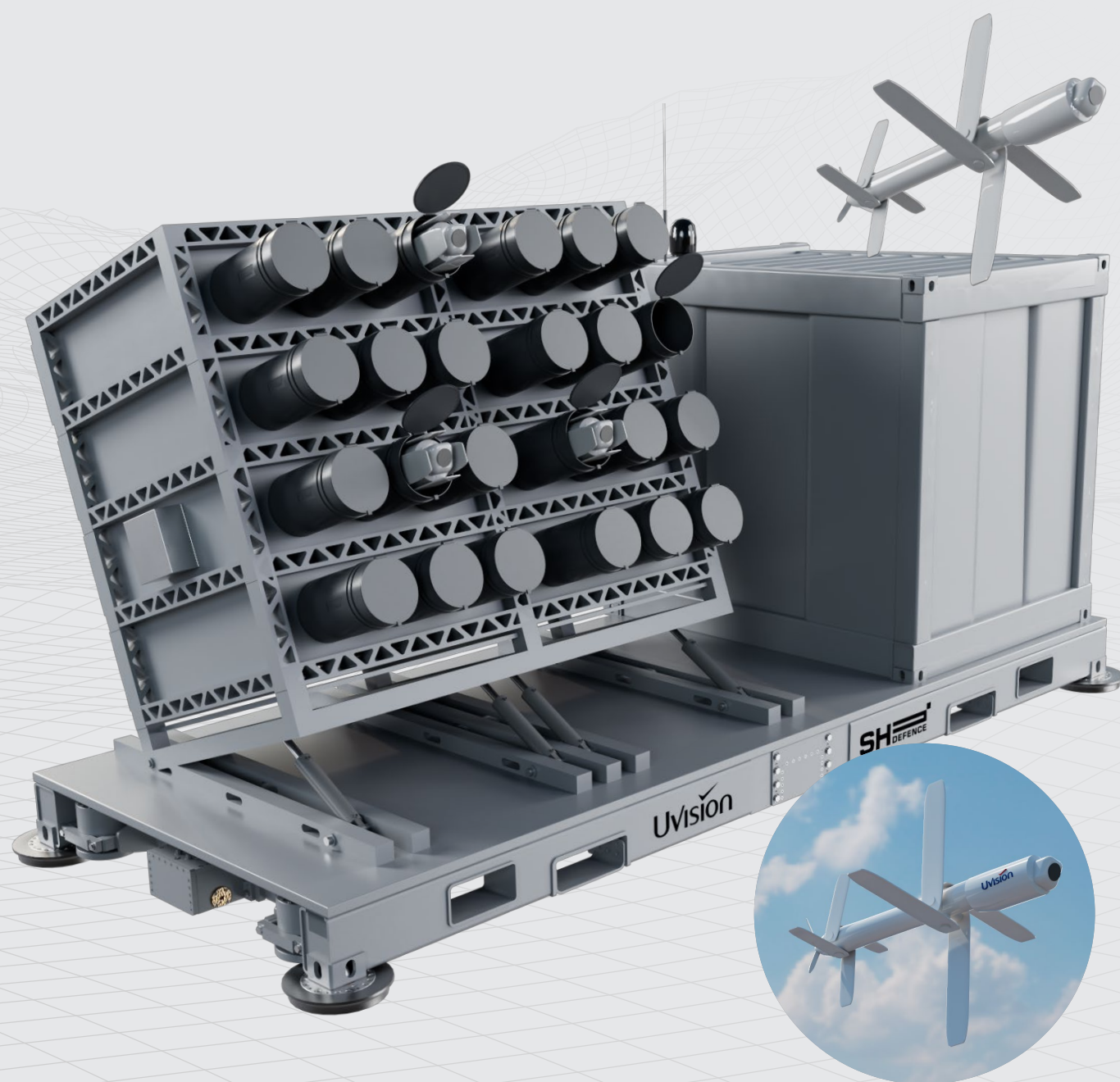
-20°C to +45°C



Weight range

5 ton - 13 ton





Loitering munitions

Containerised multi-mission module for routine and emergency repair tasks

Potential system manufactures:



Applications

The loitering munitions module enables naval forces to deploy advanced loitering munitions—often termed ‘suicide drones’—for intelligence, surveillance, reconnaissance, and precision-strike missions. These munitions loiter over target areas, identifying and engaging high-value or time-sensitive targets with minimal collateral damage, thereby enhancing operational effectiveness in modern warfare scenarios.

Options

Various configurations of the loitering munitions module are available to meet diverse mission requirements:

- **Single-munition deployment:** Designed for missions requiring the engagement of specific, high-value targets, this configuration supports the launch of individual loitering munitions, offering a balance between payload capacity and operational flexibility.
- **Multi-munition deployment:** Ideal for saturation attacks or targeting multiple threats simultaneously, this setup allows the launch of multiple loitering munitions.
- **Integrated swarm capability:** Leveraging advanced swarm technology, this configuration enables coordinated operations of numerous loitering munitions, optimising target engagement strategies and increasing operational success rates.

Considerations

The following considerations have gone into the design of the module:

- **Payload compatibility:** Ensure the module’s design accommodates the specific loitering munitions intended for use, considering factors like size, weight, and launch mechanisms.
- **Launch and recovery systems:** Integrate reliable systems for the safe and efficient launch and recovery of loitering munitions, suited to the unique characteristics of each munition type.
- **Command and control integration:** Ensure there are seamless interfaces with existing naval command and control systems to facilitate real-time mission planning, target identification, and operational oversight.
- **Safety protocols:** Implement stringent safety measures to prevent accidental activation or deployment, including fail-safe mechanisms and adherence to operational safety standards.

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions
20' ISO container



Material
High strength steel



Design Temperature
-20°C to +45°C



Weight range
5 ton - 13 ton





Loitering munitions - top launch

The module enables naval forces to deploy advanced loitering munitions.

Potential system manufactures:

Uvision

Applications

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- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

20' ISO container



Material

High strength steel



Design Temperature

-20°C to +45°C



Weight range

5 ton - 13 ton

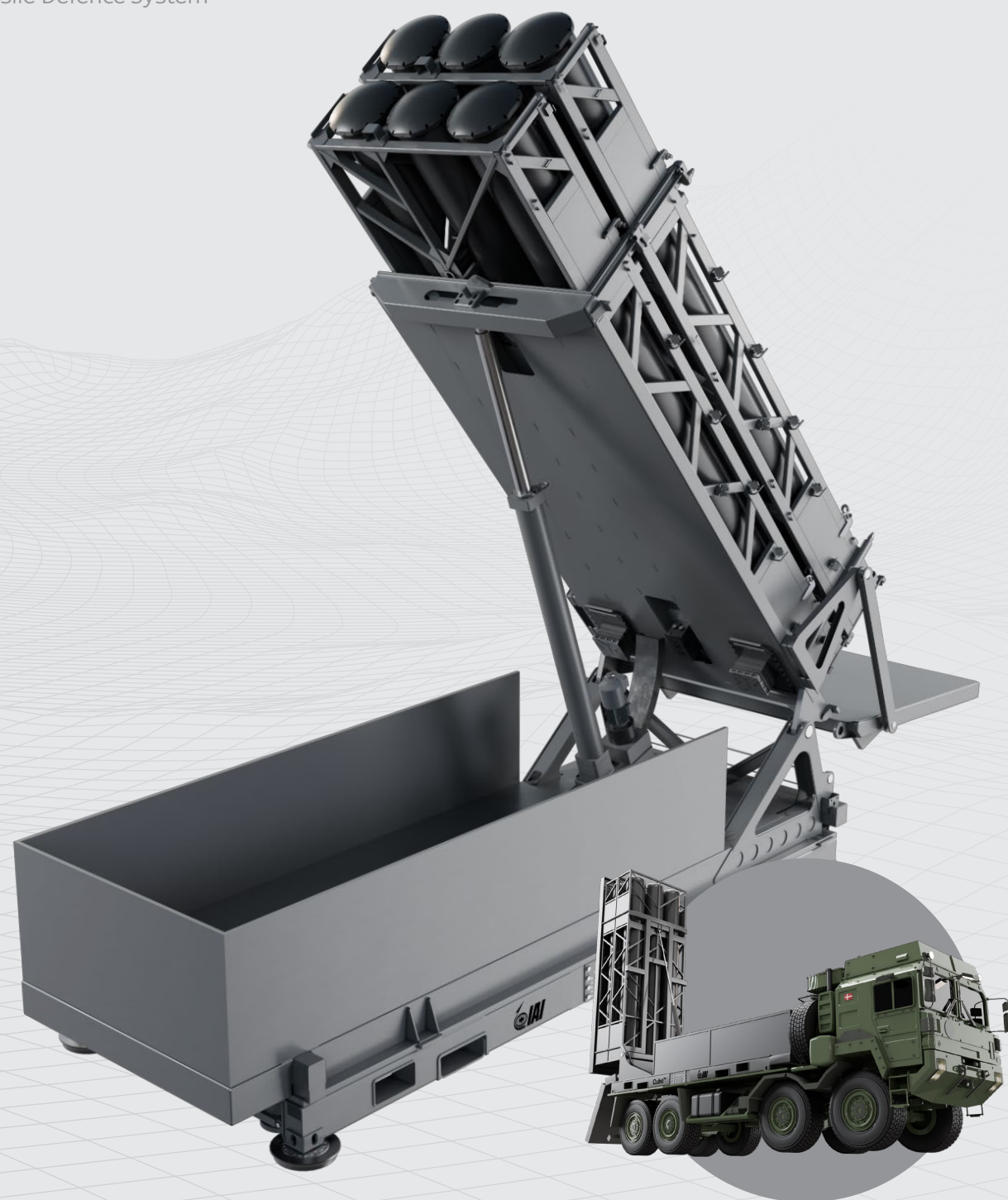




AAW

[ANTI AIR WARFARE - AAW]

Missile Defence System



Missile defence system

Containerised multi-mission module for naval air and missile defence system

Potential system manufactures:



Applications

The BARAK MX, IAI's cutting-edge integrated air defence system, is a fully network-centric solution, featuring an open system architecture and modular design, seamlessly integrating various sensors, battle management, and interceptors into a unified system.

The unique connectivity of BARAK MX allows for the expansion of defended areas by interconnecting multiple units, enabling fire units to rely on each other's assets to engage targets beyond the individual reach of each unit. It also enables the integration of Ground-Based Air Defences (GBAD) and Naval Air defences under a joint multi-layered network, enhancing them and denying enemy access or missile attacks.

Unlike air-to-air missiles converted to surface-to-air use, the BARAK MX interceptors were originally designed as surface-to-air missiles with an optimal size and diameter, which is larger than the airborne restricted air-to-air missiles.

Specs:

Full flexibility in Air & Missile defense System:

- All-Threats battle management capability
- System configuration by the users for different missions
- Modular architecture for future capabilities
- Network centric configuration supporting advanced joint operation and Air defense redundancies

System exceptional capabilities:

- All threat capability – fighters, sea-skimming and cruise missiles, TBMs, UAVs, helicopters and gliding bombs
- Naval & Land unified system configuration
- Automatic interceptor selection (optimized cost/threat operation)

System Components

Effectors:

- Three (3) BARAK Interceptor types available
- MR for 35 Km – single pulse rocket motor
- LR for 70 Km – dual pulse rocket motor
- ER for 150 Km – dual pulse rocket motor with booster (supporting TBM defense capability)
- Active high-end RF seeker for low RCS and highly maneuvering targets

Sensors:

- The system is integrated with multiple IAI/ELTA land and naval AESA radars (MMR, MF STAR, ALPHA etc..)
- The system's modularity and flexibility allows smooth integration with the customer preferred sensors

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

20' ISO container



Material

High strength steel



Design Temperature

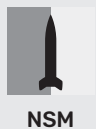
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Weight range

5 ton - 13 ton





[NAVAL STRIKE MISSILE - NSM]

NSM Missiles



NSM Missiles

NSM provides superior operational performance and high survivability against all enemy defence systems.

Potential system manufactures:



KONGSBERG

Applications

The airframe design and the high thrust to weight ratio give the NSM extremely good manoeuvrability. The missile is completely passive, has proven its excellent sea-skimming capabilities and with its advanced terminal manoeuvres, it will survive the enemy air defences. The Autonomous Target Recognition (ATR) of the seeker ensures that the correct target is detected, recognized and hit.

Options

NSM provides the following key operational features:

- Strike capability against sea and land targets
- Excellent penetration capability against advanced enemy air defence systems
- Ship class identification through
- Autonomous Target Recognition (ATR)

Specs:

NSM Missile Characteristics:

- Speed : High Subsonic
- Weight : 407 kg (897 lbs)
- Length : 3,96 m (156 in)
- Range : > 300 km (162 nm)

NSM Performance

NSM has successfully demonstrated its capabilities in challenging tests, including:

- Missile approach from over land against targets close to shoreline
- Attack from the sea with target close to shoreline
- Precision land attack
- Autonomous Target Recognition (ATR)
- Extreme maneuverability

Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

20' ISO container



Material

High strength steel



Design Temperature

-20°C to +45°C



Weight range

5 ton - 13 ton





NGF

[NAVAL GUN FIRE - NGF]

Counter unmanned aerial system



Applications

Modular and Scalable C-UAS system. Capable of engaging multiple types of surface and air threats the MSI-DS SEAHAWK DS A3 system is optimised for combating small boat swarm attacks with highly accurate and precise gunfire station to view, analyse, report sonar contact information. The system can be rapidly deployed on NATO-standard Demountable Rack Offload and Pickup System (DROPS), ISO fix point and sacrificial pads.

Options

Various configurations of the loitering munitions module are available to meet diverse mission requirements:

- MK 38
- Underwater threat detection
- Easy ship fit
- Small diameter
- Low weight & drag
- Low power consumption



Rules and regulations include:

- ANEP-99 and ANEP-91
- Relevant ship rules
- Certified by RINA and BV



Dimensions

20' ISO container



Material

High strength steel



Design Temperature

-20°C to +45°C



Weight range

5 ton - 13 ton

Counter unmanned aerial systems

Contained solution developed for augmented mobility and deployability in close range air defence.

Potential system manufactures:

MSI
MSI-Defence Systems Ltd



